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1892

UNION MEETING

OF THE

NEW JERSEY AND PENNSYLVANIA

STATE DENTAL SOCIETIES

AT

WEST END AND OCEAN HOTELS,

ASBURY PARK, N. J.

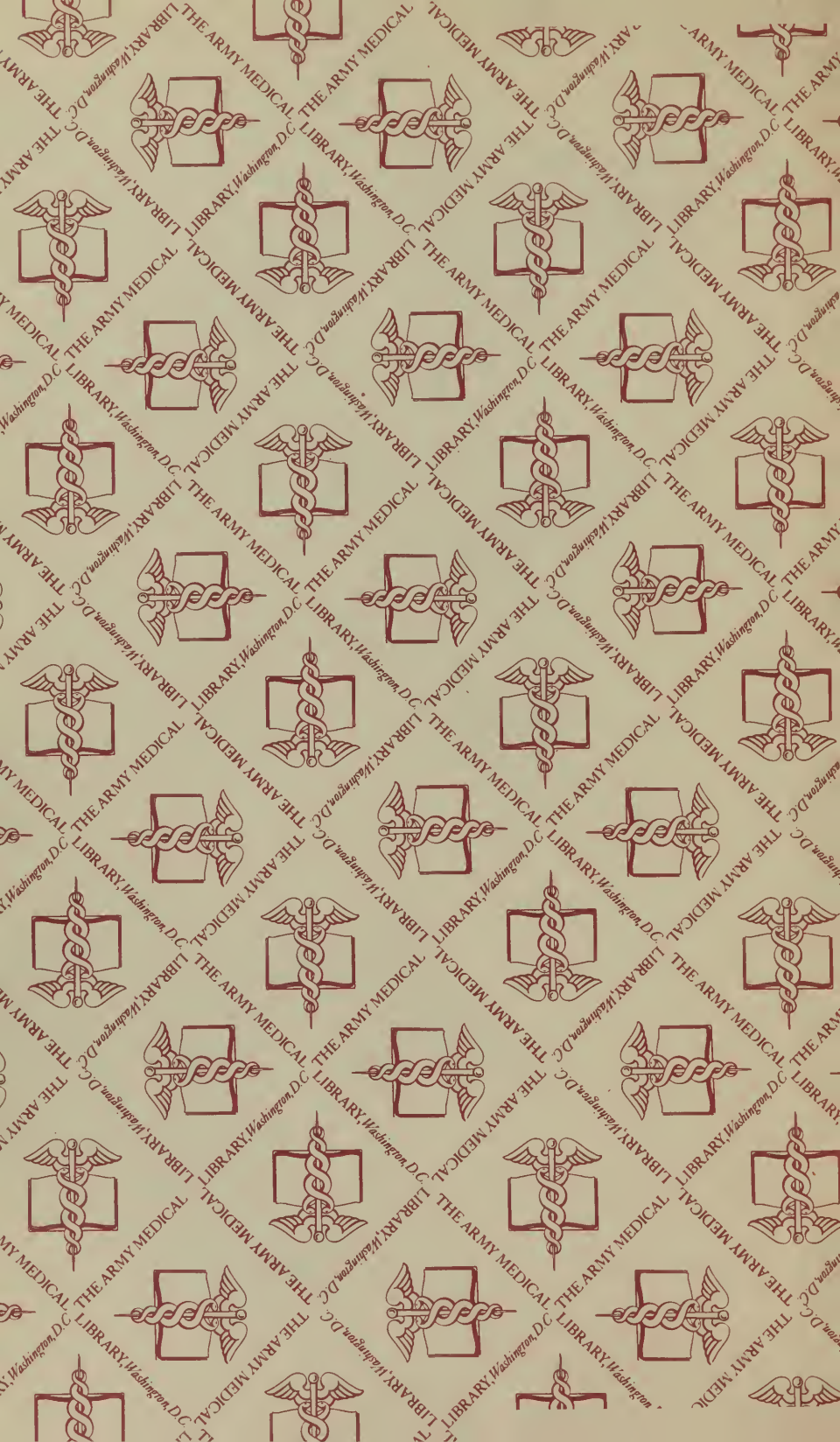
July 15, 16, and 17,

1891.

PHILADELPHIA:

THE S. S. WHITE DENTAL MANUFACTURING COMPANY.

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TRANSACTIONS

OF THE

New Jersey State Dental Society.

Officers for 1892.

<i>President,</i>	B. F. LUCKEY, D.D.S.,	PATERSON.
<i>Vice-President,</i>	DR. OSCAR ADELBERG,	ELIZABETH.
<i>Secretary,</i>	CHAS. A. MEEKER, D.D.S., 29 Fulton St.,	NEWARK.
<i>Treasurer,</i>	GEO. C. BROWN, D.D.S.,	ELIZABETH.

EXECUTIVE COMMITTEE.

DR. OSCAR ADELBERG, *Chairman*, Elizabeth.
C. W. F. HOLBROOK, D.D.S., Newark.
R. M. SANGER, D.D.S., East Orange.
S. C. G. WATKINS, D.D.S., Montclair.
HARVEY IREDELL, D.D.S., New Brunswick.

MEMBERSHIP COMMITTEE.

J. W. CURTIS, D.D.S., Hackettstown.
JAS. G. PALMER, D.D.S., New Brunswick.
W. E. TRUEX, D.D.S., Freehold.
THOMAS MOORE, D.D.S., Paterson.
ALBERT WESTLAKE, D.D.S., Elizabeth.

STATE BOARD OF EXAMINATION AND REGISTRATION IN DENTISTRY.

FRED. A. LEVY, D.D.S., Orange.
G. CARLETON BROWN, D.D.S., *Secretary*, Elizabeth.
F. C. BARLOW, D.D.S., Jersey City.
E. M. BEESLEY, D.D.S., Belvidere.
A. R. EATON, D.D.S., Elizabeth.

Active Members.

C. S. Stockton, Newark.
Chas. A. Meeker, Newark.
E. O. Peck, Morristown.
Jas. C. Clarke, Jersey City.
Fred. A. Levy, Orange.
J. E. Jacquette, Woodstown.
B. F. Luckey, Paterson.
H. A. Hull, New Brunswick.
J. A. Osmun, Newark.
S. T. Slocum, Asbury Park.
J. Van Antwerp, New Brunswick.
J. D. Throckmorton, Red Bank.
Wm. P. Richards, Orange.
S. C. G. Watkins, Montclair.
C. W. F. Holbrook, Newark.
Harvey Iredell, New Brunswick.
H. B. Van Doren, Red Bank.
J. L. Crater, Hackettstown.
Edwin Chew, Salem.
G. C. Brown, Elizabeth.
W. Pinney, Newark.
F. C. Barlow, Jersey City.
Oscar Adelberg, Elizabeth.
E. M. Beesley, Belvidere.
P. J. Wilson.
F. W. Kitchell, Perth Amboy.
J. Chadsey, Newark.
Elbert T. Davis, Bridgeton.
J. F. Lummis, Bridgeton.
D. W. Kleinhaus, Newark.
R. H. Sheppard, Phillipsburg.
A. S. Kniffen, Trenton.
A. R. Eaton, Elizabeth.
H. A. Benedict, Jersey City.
E. R. Brown, Mattawan.
J. G. Palmer, New Brunswick.
A. M. Hedges, Hoboken.
R. M. Sanger, East Orange.

W. E. Francis, Red Bank.
Harry D. Gihon, Trenton.
J. W. Curtis, Hackettstown.
G. Carleton Brown, Elizabeth.
C. A. Timme, New York.
Geo. E. Adams, South Orange.
C. D. Cheney, Hoboken.
A. W. Irwin, Camden.
I. M. Vandewater, Madison.
O. E. Peck, Bridgeton.
W. E. Linstead, New Brunswick.
Edward Goertz, Somerville.
H. Lyman Clark, Rahway.
Wm. E. Truex, Freehold.
Geo. M. Whitfield, Newark.
J. V. Hall, Somerville.
Thomas Moore, Paterson.
Frank S. Crane, Montclair.
S. C. Hamilton, Bloomfield.
W. Woolsey, Elizabeth.
Geo. R. Herbert, Spring Lake.
Chas. W. Meloney, Camden.
W. F. Reh fuss, Ocean Grove.
Chas. Harker, Mt. Holly.
Albert Westlake, Elizabeth.
W. L. Fish, Newark.
Henry Pfhieffer, Newark.
B. F. Tillyer, Dover.
S. S. Hawley, Newark.
T. F. Heineken, Burlington.
W. W. Hawke, Flemington.
F. J. Maynard, Englewood.
Charles M. Howe, Passaic.
A. Amandus Schubert, Blairstown.
C. S. Hardy, Summit.
F. E. Riley, Newark.
F. L. Hindle, Paterson.
W. Lowenthal, Hoboken.

TRANSACTIONS
OF THE
New Jersey State Dental Society.

TWENTY-FIRST ANNUAL SESSION.

THE twenty-first annual meeting of the New Jersey State Dental Society was held at the West End and Ocean Hotels, Asbury Park, N. J., beginning Wednesday, July 15, 1891.

FIRST DAY—MORNING SESSION.

The Society was called to order at 11 A.M.; President George Emery Adams in the chair.

The meeting was opened with prayer by Rev. John Handley, A.M.

Applications for membership and for honorary membership were received, and, on motion, referred to the Committee on Membership.

Reports of Committees being next in order, the Executive Committee was called and reported progress.

The Committee on Accommodations reported as follows :

The Committee on Accommodations report having secured the West End and Ocean Hotels at the rates mentioned in the programmes.

The hotel proprietors are doing all that can be expected for the meeting, and everything promises to go well.

CHAS. A. MEEKER,
FRED. A. LEVY,
Committee.

Report received.

The report of the Exhibit Committee called for, and was read by Dr. Meeker, as follows :

ASBURY PARK, July 17, 1891.

The Exhibit Committee would respectfully report that the exhibition room has been filled by an exhibit that is seldom witnessed at dental meetings. Exhibitors have shown a desire to put forth their best products, including many new and valuable features, and visitors have manifested a lively interest in all to be seen. All the space at the command of the committee has been occupied, and the material result to the Society gratifying.

Net receipts of committee amounting to \$90.00.

C. W. F. HOLBROOK, *Chairman.*

EXHIBITORS REPORTED IN ATTENDANCE.

The S. S. White Dental Mfg. Co., C. Ash & Sons, Frank E. Leman (dental chair), Gideon Sibley, R. S. Williams, Gould dental chair, Seabury & Johnson, Johnson & Johnson, J. E. Register, G. F. Vose, A. H. Gilson.

The report was received.

The Legislative Committee reported through its chairman, Dr. Levy, as follows :

The Legislative Committee report that they did not deem it best to ask for any alteration to the law last winter, but the numerous complaints from the profession of damage done the public by the promiscuous extraction of teeth by unqualified men will compel them to ask the Legislature at the next session to amend the law so that it will prohibit the extraction of teeth by any but registered dentists or physicians for fee or reward.

FRED. A. LEVY, *Chairman.*

JAMES G. PALMER,

F. C. BARLOW,

E. M. BEESLEY,

GEO. C. BROWN,

CHAS. A. MEEKER.

Report received and committee continued in power.

Dr. B. F. Luckey, Chairman of the Entertainment Committee, reported progress.

Report received and the committee continued in power.

The special committee on Joint Meeting and Anniversary Exercises, Dr. Meeker, Chairman, reported that the committee had attended to its duties as shown by the programme. Report received.

The Clinic Committee, through its Chairman, Dr. S. C. G. Watkins, reported that the committee had secured operators as announced in the printed programme. Report received and the committee continued in power.

The Clinical Conference for New Jersey, Dr. Henry A. Hull, Chairman, reported as follows :

The members of the Conference Committee are requested to meet to-morrow morning at nine o'clock, in room 150, and members of societies who are not posted as to the object of that committee are referred to page 14 of printed programme.

DRS. W. E. MAGILL AND H. A. HULL.

The Committee on the Dissemination to the General Public of Dental Literature reported through its Chairman, Dr. R. McLean Sanger, as follows :

By a singular coincidence the subject of educating the public dentally came before several of the dental societies of this country last season, in the form of essays, and as usual New Jersey was first.

The result of these various essays has been that the attempt has been made by different parties during the year to put into practice the suggestions of the different essayists.

While only an indifferent result has been reached, they have served the purpose of suggesting to your committee a mode of procedure which they beg leave to lay before this Society, with the hope that, if followed out, it may prove a long step toward a happy solution of this very important question. It is as follows :

1. That the office of Editor shall be created by this Society. 2. That he shall be elected annually. 3. That he shall prepare matter for the public press. 4. That the associated press shall be notified of his election by the secretary. 5. That he shall prepare and submit to this Society, at its annual meeting, a report of his work, and of the progress of dentistry during the year.

R. M. SANGER,
ALBERT WESTLAKE,
CHAS. A. MEEKER, *Committee.*

The Committees on Dental Mechanical Appliances and Dental Materia Medica, and the Press Committee, were called, but were not ready to report.

The Treasurer, Dr. Geo. C. Brown, read his annual report, which was received, as follows :

ELIZABETH, N. J., July 15, 1891.

GEO. C. BROWN, TREASURER, IN ACCOUNT WITH NEW JERSEY STATE
DENTAL SOCIETY.

Cash received for dues and assessments	\$184.00
Received from Dr. Meeker, initiation fees	48.00
“ “ Dr. Adams, for exhibit	56.55
		<hr/>
		\$288.55
Carried forward	\$288.55

Brought forward		\$288.55
CR. CASH PAID.		
Dr. C. A. Meeker	\$59.54	
Knight & Knight	62.75	
Charles Mayr	17.00	
Newark <i>Daily Advertiser</i>	64.00	
Penfield Brothers	2.00	
Elizabeth <i>Daily Journal</i>	6.25	
Hayne & Co.	4.59	
Newark <i>Daily Advertiser</i>	10.00	
J. W. Bolles	5.00	
The S. S. White Dental Manufacturing Company	2.25	
Typewriting25	
Fred. A. Levy	9.65	
Coleman House	1.25	
Postage	3.00	
Balance due Treasurer on last settlement	12.86	
		<hr/>
		260.39
		<hr/>
		\$28.16

We have examined the accounts and vouchers of the Treasurer, and found them correct.

B. F. LUCKEY,
R. M. SANGER,
OSCAR ADELBERG,
C. W. F. HOLBROOK,
S. C. G. WATKINS.

The Committee on Essays was called, and the report was read by the Chairman, Dr. S. C. G. Watkins. Report received.

Under New and Miscellaneous Business, the following communication was read by the Secretary :

NEWARK, N. J., June 13, 1891.

DR. C. A. MEEKER, SECRETARY NEW JERSEY STATE DENTAL SOCIETY :

Dear Sir,—At a meeting held September 15, 1890, a committee of ten was appointed from the Central Dental Association of Northern New Jersey to agitate the question of patents in dental operations, and to petition Congress to pass a law against granting such patents.

The committee appointed were Drs. Watkins, Luckey, Fish, Stockton, Eaton, Meeker, Sanger, Levy, Richards, and Adams.

Dr. S. C. G. Watkins, of Montclair, was made Chairman, and Dr. W. L. Fish, of Newark, was made Secretary. Drs. Watkins, Stockton, and Levy were appointed a special committee to bring the matter before the Boston dental meeting.

An appropriation of \$50 was made by the Association for the expense pertaining to bringing the matter before the profession.

It has been requested that the action taken by the Association in reference to the above be communicated to the State Dental Society.

Respectfully yours,

S. S. HAWLEY,

Secretary Central Dental Association of Northern New Jersey.

Dr. Watkins. I move that a committee be appointed from this Society to confer with that of the Central Dental Association, and also that this Society make an appropriation of \$25.00.

Dr. Meeker. I would amend by moving that we first indorse this action, and appoint a committee on behalf of this Society.

The amendment was seconded, whereupon Dr. Watkins withdrew his motion. The amendment thus taking the place of the original motion, was adopted.

The Chair stated that the names of the committee would be announced later.

Dr. Watkins offered the following resolution :

ASBURY PARK, N. J., July 15, 1891.

Resolved, That we cordially approve the plan for holding a World's Columbian Dental Meeting in the city of Chicago, Ill., the latter part of August and the first of September, in the year 1893, and pledge the support and assistance of the New Jersey State Dental Society and its members to promote the interest and harmony of the meeting in every way that may be in our power.

B. F. LUCKEY,

R. M. SANGER,

S. C. G. WATKINS, *Chairman.*

Dr. Levy. I second that resolution, and would like to explain why I do so. New Jersey can hardly refuse to indorse the plan, because it is to New Jersey that the credit should be given for the starting of the World's Fair and Columbian Meeting.

Dr. G. C. Brown. I move to amend the resolution by adding the words, in the first line, "As originally suggested by the New Jersey State Dental Association."

The resolution as amended was read.

Dr. Luckey. I am opposed to placing in that resolution any reference whatever to the State Dental Association. I think it would be in bad taste, as it would be forced in that resolution. I think the resolution as originally written would be much better. This thing will be published before the whole dental world, and I do not think it would redound at all to our credit.

Dr. Sanger. I agree with what Dr. Luckey has said. The clause

put in there handicaps us in connection with this World's Dental Meeting. If it is not carried out there as originally suggested, we do not indorse it. I think also it is bad taste to go on record. It looks like little petty jealousy on our part. We are able as a Society—we have well demonstrated the fact that we are able—to hold up our end, and when we go to Chicago we are going to hold it up, and deeds speak louder than words. This will be published and criticised in that respect.

Dr. W. W. Walker. It was understood not only by the State of New Jersey, but by all the other States represented at the meeting at the Hoffman House some time ago, that at that time it was unanimous that the matter should be referred to the American Dental Association. It was so referred, and I thought at that time that of course it was taken out of the hands of any local dental society. Now, then, in offering the resolution, I think Dr. Watkins forgot to mention one fact; that is, that he (Dr. Watkins) has been appointed by the Executive Committee of the World's Columbian Dental Committee to act in this capacity. They simply want the indorsement of this Society.

Dr. Brown. I think my amendment was a good and correct one. New Jersey started this movement. I think the jealousy came from the other side of the question, where New Jersey was not treated right and credited with the work which she did; and as they will not give us credit, I think we should assert and claim the work that we did. I do not see any impropriety in that clause at all.

Dr. Levy. I understand that at the joint meeting in New York—the meeting of the different societies called upon to send delegates—the action was that the matter be referred to the American and the Southern Dental Associations and be left in their hands. I would like to hear from the representative of the Columbian Dental Meeting, as he was chairman of that meeting, whether or not that was referred to the American and Southern, and if it was, why no mention was made of its coming from New Jersey?

Dr. Watkins. As I remember that meeting, it was referred to the American and Southern; and as to its not being mentioned at the meeting of the Southern and the American last summer when an Executive Committee was appointed, I cannot tell anything about it. Dr. Meeker informs me that he sent a report of that meeting to the Secretary of the American Association, Dr. Cushing, and that Dr. Cushing made no reference to it in the American Association, which of course we would naturally expect him to do, and I am informed that the matter received no attention.

Dr. Meeker. I am a little sorry that this matter has come up. I acted as Secretary of that meeting, and the minutes were that the resolution was to send the same to the American Association. I mailed the resolution to Dr. Cushing at Excelsior Springs, Kansas, and I see no mention of it whatever ; and I have failed to see in the published proceedings any mention of New Jersey. I also sent them to Orange, to the Corresponding Secretary, Dr. Levy.

Dr. Osmun moved the previous question.

Dr. Brown. I withdraw the amendment.

Dr. Levy. Possibly we could get more light on the matter if we awaited Dr. Stockton's appearance. He was Vice-President at the time the matter was brought up at Atlanta, and also one of the members of the committee from New Jersey to issue the call for the meeting. I move that it lie on the table.

Dr. Watkins. I think as Dr. Brown is willing to withdraw his amendment, the first motion had better be put as it is, because Dr. Stockton will not be here until this evening, and then it will be too late for us to act upon it.

The President. A motion to lay on the table is not debatable.

The motion to lay on the table was put to vote and lost.

Dr. Brown. It seems to be the idea of the majority that this would be placing ourselves in rather the position of some kind of feeling of jealousy, which I did not intend at all. If the Society is going to take it up at some other time, and ascertain why and how certain things have been done, I am willing to withdraw this amendment.

Dr. Luckey. I certainly would not like to agree to any such bargain as that. I don't think this resolution has anything at all to do with the question that has been discussed here ; it is simply a question whether we will or will not pledge ourselves to advance the interests materially and otherwise of that dental conference to be held in 1893. It is simply a question whether we think it is a proper thing to hold that meeting. I call for the question upon the original resolution.

The President. The question before the House is upon the original resolution.

Dr. Levy. I would like to have it read.

The original resolution was read.

Dr. Levy. We are going to approve of a plan of holding a meeting. Will we have the plan stated ?

The question was called for, and the motion was put and carried.

Dr. Watkins. I move that an appropriation of \$25 be made to

meet the expenses of securing the passage of a law abolishing all dental patents. Carried.

The Secretary read a communication from Dr. S. S. Hawley, Secretary, referring to the case of Dr. E. Parmly Brown.

CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY.

NEWARK, N. J., June 13, 1891.

DR. C. A. MEEKER, SECRETARY NEW JERSEY STATE DENTAL SOCIETY :

Dear Sir,—At a meeting of the Central Dental Association of Northern New Jersey, held September 15, 1890, an extract was read from the *Kansas City Journal* which reported remarks made by Dr. E. Parmly Brown at a meeting held at Excelsior Springs. The remarks criticised the dental laws of New Jersey and disparaged members of the dental profession in New Jersey.

A motion was made and carried that Dr. Brown be communicated with, and that he be requested to appear at the next meeting and explain his remarks. As his letter of explanation was not satisfactory to the Association, a motion prevailed that Dr. Brown's name be dropped from the roll of honorary members.

At a meeting of the Association held May 18, 1891, a motion prevailed that the action of the Association toward Dr. Brown be referred to the New Jersey State Dental Society at its next meeting.

Very respectfully,

S. S. HAWLEY,

Secretary.

Dr. George C. Brown. I move that the communication be spread upon the minutes, and that the name of E. Parmly be added before the name of Dr. Brown wherever it occurs.

Dr. Watkins. I offer an amendment as follows :

That the New Jersey State Dental Society approve of the action of the Central Dental Association.

Dr. Brown. I accept the amendment.

The motion as amended was carried.

Dr. Watkins. I move that a committee of three be appointed to draft suitable resolutions in regard to the death of Dr. William H. Atkinson, and that Dr. Eaton be made Chairman of that committee.

The Secretary. I have a communication here from the Central Dental Association in relation to that matter.

The communication was read, as follows :

CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY.

NEWARK, N. J., May 1, 1891.

At a meeting of the Central Dental Association of Northern New Jersey, held on April 20, 1891, the following resolution was unanimously adopted :

Resolved, That a Memorial Committee be established or instituted, composed of two members each from the First District Dental Society of New York, the Odontological Society of New York, Second District Society of Brooklyn, Central Dental Association of Northern New Jersey, and New Jersey State Dental Society, making a committee of ten, who shall be empowered to organize themselves and call upon the whole world for a generous response, to the end that a suitable memorial be erected to the memory of our lamented friend, Dr. Wm. H. Atkinson.

B. F. LUCKEY,

FRED. A. LEVY,

Committee Central Dental Association of Northern New Jersey.

Yours respectfully,

S. S. HAWLEY,

Secretary.

On motion, the communication was received.

Dr. Watkins. Now, Mr. President, I move that a committee of two be appointed to co-operate with the committees which have already been appointed by the New Jersey and New York societies to arrange a suitable memorial in relation to the death of Dr. William H. Atkinson.

The motion was carried.

Moved and carried that the committee be appointed by the Chair.

The President appointed Drs. S. C. G. Watkins and A. R. Eaton.

Dr. Watkins moved that a committee of three be appointed to draft suitable resolutions to be presented to this meeting in regard to the death of Dr. William H. Atkinson. So ordered.

The committee was appointed as follows: C. S. Stockton, H. B. Van Dorn, Harvey Iredell.

Dr. Westlake. There has been a report made by the Committee on the Dissemination to the General Public of Dental Literature, and I would suggest the name of Dr. J. A. Osmun, of Newark, as the editor of the report spoken of by the committee. I think Dr. Osmun's paper last year was the starter of the subject, and I think he has given the matter sufficient attention to carry it through successfully.

Dr. Brown. I think the resolution provides for the election every year of an editor; the motion is out of place.

Dr. Westlake. The report of the committee was accepted.

Dr. Brown. It was accepted, but has not been considered yet. There were several suggestions made in that which have not been adopted. To comply with the resolution requiring an election every year, there will have to be a change in the by-laws.

The President. If it is an elective office, there must necessarily be an amendment to the Constitution before it can be acted upon.

Dr. Watkins. The American Dental Association has sent out circulars requesting that all State and local societies appoint committees to bring in a report to the American Association of the work which they have done during the past year. I offer the resolution that a committee of three be appointed to give in a report of the work of this Society for the past year to the American Association. So ordered.

Dr. Watkins. I move that a committee of three be appointed to draft suitable resolutions in regard to the death of Dr. J. W. White. So ordered.

Dr. Watkins. I move that the Secretary be empowered to have printed two hundred copies of the Constitution and By-Laws as amended at our last meeting. There were several amendments made at the last meeting, and we haven't any By-Laws now to work upon.

Dr. Osmun. I move an amendment to that, that it be referred to the Executive Committee, with power.

The Secretary read a communication, dated July 4, 1891, from the Pennsylvania State Dental Society.

July 4, 1891.

DR. C. A. MEEKER :

My Dear Sir,—At the last past annual meeting of the Pennsylvania State Dental Society, held in July, 1890, at Minnequa, Pa., the following resolution was unanimously adopted :

Resolved, That in accepting the invitation of the New Jersey State Dental Society to meet with them in joint session in July, 1891, this Society extends a cordial invitation to the New Jersey State Dental Society to meet with us in 1892.

Hope to meet you at Asbury Park.

Very truly and fraternally yours,

C. V. KRATZER,
Rec. Secretary for P. S. D. S.

Dr. Levy. I move the invitation be accepted. Motion carried.

The President. The Membership Committee will please report.
Dr. Osmun, Chairman.

Dr. Osmun read report upon the names presented for membership, and also a report in regard to Dr. S. B. Johnson, of Dover, and on motion the report was accepted.

Dr. Watkins presented his resolution with regard to printing copies of the Constitution and By-Laws as amended by Dr. Osmun, and on motion the same was carried.

The President. The next order of business is the election of members, and I will appoint Drs. Levy and Eaton as Tellers.

The following gentlemen were elected to active membership : Drs. C. S. Hardy, Summit ; A. A. Schubert, Blairstown ; F. E. Riley, Newark ; and Frank L. Hindle, Paterson.

The following gentlemen were elected honorary members : Dr. R. C. Newton, Montclair ; Professor Chas. Mayr, Springfield, Mass. ; Dr. Geo. S. Allan, New York.

Dr. Luckey, Chairman of the Executive Committee, reported that the election of officers would take place immediately after the anniversary meeting.

The Committee on Membership reported favorably on the name of Dr. W. Lowenthal, of Hoboken, and he was thereupon elected to membership in the Society.

Dr. Meeker. "This is to certify that William Donnally, D.D.S., is the accredited delegate of the Washington City Dental Society to the annual meeting of the New Jersey State Dental Association to be held at Asbury Park, July 15, 1891." I would like to say that Dr. Donnally is present.

Dr. Westlake gave notice that he would offer an amendment to the By-Laws.

The President. Dr. Brown, Treasurer, has a communication to offer.

Dr. Brown. I received a letter ; it is directed to "Dr. George C. Brown, Treasurer of the so-called New Jersey State Dental Association." I found, when I opened it, it read : "To whom it may concern : Although I am an accountant since eighteen years of age, I give it up as regards the financial affairs of this Society," etc. (Reading). Signed, "Frank M. Odell, Orange, N. J."

Now, to set myself right on the question, I beg leave to give you a few facts. Dr. Odell's name appears first on the roll of this Society in 1889, where he is charged with dues two dollars, assessments four dollars, total six dollars, which he paid in that year. In July, 1890, the dues having been raised from two to three dollars, he owed three dollars, which he failed to pay. In 1891 the dues having remained unpaid, made a total of six dollars. I have the programmes since 1889, and I find that his name appears each year from Orange. I will say also that he received a bill which I sent him for six dollars, and that was directed to Orange, and his letter to me is postmarked Orange, so where Dr. Odell lives I don't know ; he gets his letters at Orange. "Last summer I paid fifteen or sixteen dollars, and according to this bill I owe yet six dollars." Now, whoever he gave the sixteen dollars to, it certainly did not come into the hands of

the Treasurer. He says, "I don't owe anything. . . . Strike my name off." I report Dr. Odell as being dropped from the roll of membership for non-payment of dues.

Dr. Levy. I met Dr. Odell on the train just after he received this bill, and he made several inquiries of me as to what it was for ; I told him. He said he "thought it was always payable at the meetings." I said, "It is due the first of July ; some people leave it until the first meeting to pay it, others don't pay it at all," and he said, "Well, I thought you only paid when you got there." "No," I told him. "Well," he said, "I thought it was only for the expenses of the meeting, and what expenses do they have before the meeting?" I explained it to him. "Well," he said, "I have been going down there ever since you began to hold the conventions at Long Branch, and I never paid except when I went to the meetings." I said, "You have got things mixed ; that was the old American Convention." I think he is laboring under a false impression, and I hardly think we will be able to get the impression out of his head.

Dr. Meeker read a communication from J. R. Smith that he would like to photograph the whole Convention about five o'clock in the afternoon, outside of the hotel.

Dr. Eaton moved to refer to the Executive Committee. Carried.

Dr. Watkins. I would like to say at this time with reference to the American Association meeting at Saratoga, 4th of August, that we hope we shall have very large representation there. I would like to urge upon the members present not to neglect getting certificates from the Secretary, so that they will be identified as coming from New Jersey immediately upon entering the society there. Here is a circular which has been sent by the officers of the American Association (reading same).

Dr. Meeker. I would like to add to Dr. Watkins's remark, that if the members will say they wish certificates they will be prepared.

Dr. Westlake. I give notice that I will offer a resolution to change the Constitution by striking out the word "and" in Article III, and inserting the words "an Editor" after the "Board of Examiners," and also in Article I of the By-Laws, Section 7, "Duties of the Editor. The Editor shall prepare matter for the public press, and he shall prepare and submit to this Society at its annual meetings the report of the work and progress in dentistry during the year."

The Chair announced the appointment of the following committees :

Atkinson Memorial Committee, Drs. Watkins and Eaton.

Committee on Patents, Drs. F. C. Barlow, W. E. Truex, and E. M. Beesley.

Committee to report resolutions on the death of Dr. Atkinson, Drs. C. S. Stockton, H. B. Van Dorn, Harvey Iredell.

Committee on the death of Dr. J. W. White, Drs. Thomas Moore, J. Allen Osmun, M.D.S.; A. Westlake.

On motion, the Convention adjourned until 2 P.M.

AFTERNOON SESSION.

The Convention was called to order at 3.15 P.M. by the President.

Dr. Levy. I ask the unanimous consent of the Convention to suspend the order of business and to proceed with the election of officers. So ordered.

The President. Nominations for President are in order.

Dr. B. F. Luckey was nominated for President. On motion, the nominations were closed, and the Secretary cast the ballot of the Convention for Dr. B. F. Luckey, of Paterson, for President, who was declared duly elected.

The President. Nominations for Vice-President are in order.

Dr. Oscar Adelberg was nominated. On motion, the nominations were closed, and the Secretary cast the ballot of the Convention for Dr. Oscar Adelberg, of Elizabeth, for Vice-President, who was declared duly elected.

The President. Nominations for Secretary are in order.

Dr. Levy nominated Dr. Charles A. Meeker for Secretary. On motion, the nominations were closed, and the President cast the ballot of the Convention for Dr. Charles A. Meeker, of Newark, for Secretary, who was declared duly elected.

The President. Nominations for Treasurer are in order.

Dr. George C. Brown was nominated. On motion, the nominations were closed, and the Secretary cast the ballot of the Convention for Dr. George C. Brown, of Elizabeth, for Treasurer, who was declared duly elected.

The President. Nominations for members of the Executive Committee are in order.

The following gentlemen were nominated: Drs. R. M. Sanger, C. W. F. Holbrook, H. Iredell, J. W. Curtis, S. C. G. Watkins, J. A. Osmun, W. Pinney, J. G. Palmer, and Thos. Moore.

After balloting, the following were elected: Drs. C. W. F. Holbrook, S. C. G. Watkins, R. M. Sanger, and Harvey Iredell.

The President: Make your nominations for the Committee on Membership.

The following were nominated: Drs. A. Westlake, J. W. Curtis, J. A. Osmun, W. E. Truex, Jas. G. Palmer, H. A. Benedict, and Thos. Moore.

The Secretary. The gentlemen receiving the highest number of votes are Drs. J. W. Curtis, W. E. Truex, Jas. G. Palmer, A. Westlake, Thos. Moore. They are therefore elected.

The President. There is to be a recommendation to the Governor for appointment on the Board of Registration and Examination in Dentistry in place of Dr. G. Carleton Brown, whose term expires in October. Please make nominations.

Dr. G. Carleton Brown was nominated. On motion, the nominations were closed, and the Secretary cast the ballot of the Convention for Dr. G. Carleton Brown for reappointment.

The Secretary presented the name of Dr. T. S. Heineken, of Burlington, for active membership. Referred to the Membership Committee.

The Secretary. I have here an amendment to the Constitution by Dr. A. Westlake:

ARTICLE III. *Officers.*—The officers of this Society shall consist of a President, Vice-President, Secretary, Treasurer, Executive Committee of four members, a Board of Examiners of five members, and an Editor, which officers shall be chosen annually.

By-Laws, Article I, Section 7. *Duties of the Editor.*—The Editor shall prepare matter for the public press, and shall prepare and submit to this Society at its annual meeting a report of his work and the progress of dentistry during the year. The Editor upon election shall appoint two associates, to whom all literary material shall be submitted and passed upon at a joint meeting before publication.

Laid upon the table.

The Secretary read the report of the Press Committee, Drs. J. C. Hertz and F. C. Barlow, which was received.

The Membership Committee reported favorably on the application of Dr. T. S. Heineken, of Burlington.

The Committee on Resolutions on the death of Dr. J. W. White reported as follows, through its Chairman, Dr. Moore:

We, the members of the New Jersey State Dental Society, assembled in annual convention at Asbury Park, July 15, 1891, in common with our fellow-practitioners throughout the entire world, deplore the great loss the dental profession has sustained in the death of Dr. J. W. White, of Philadelphia, and we desire to record our appreciation of his great abilities, integrity, and ex-

ample in upholding the dignity and promoting the interests of our chosen calling. We also extend to his family our sincere sympathies in this hour of their bereavement.

Resolved, That a copy of these resolutions be sent to the family and spread upon the minutes of this Association, as well as copies be sent to the dental journals.

THOMAS MOORE, D.D.S.

J. ALLEN OSMUN, M.D.S.

A. WESTLAKE, D.D.S.

The report was accepted, and ordered spread upon the minutes, and the committee was discharged with thanks.

The Secretary read the letter of Dr. T. S. Heineken, of Burlington, N. J., which accompanied his application for membership. Drs. Eaton and Truex, as tellers, announced that the applicant was unanimously elected to membership.

The President. Gentlemen, we will listen to the reading of the paper by Dr. Hayhurst.

Dr. J. Hayhurst, Lambertville, read his paper, entitled, "The History and Organization of the New Jersey State Dental Society ; its Officers and Members," which was responded to by Dr. B. F. Luckey, Paterson, N. J.

On motion, the subject was passed.

On motion, the Society adjourned, to reconvene in joint session with the Pennsylvania Society at 8 o'clock P.M.

CHAS. A. MEEKER, D.D.S., *Secretary*.

THE HISTORY AND ORGANIZATION
OF THE
New Jersey State Dental Society,
ITS OFFICERS AND MEMBERS.

(Read on its twenty-first anniversary at Asbury Park, N. J., July 15, A.D. 1891.)

By J. HAYHURST, D.D.S.

GENTLEMEN : On our assembling on this twenty-first anniversary of our Society, I feel it in my heart to express my gratification on being selected as your orator on this occasion. It has always seemed to me a proper and fitting duty, both toward men and toward bodies of men when formed into societies, as they advance along the pathway marked out for them, that there should be suitable monuments to mark their progress.

There are four important eras in the lives of most men,—their birth, their manhood, and marriage and death. So it is with societies, and especially with ours. We have had our birth, we have just arrived at our majority, and I believe to-morrow we are to have a wedding, which will unite the Pennsylvania and New Jersey State Dental Societies, thus forming a combination which will bring into exercise the varied knowledge and attainments of both bodies, thereby increasing their usefulness.

I was present at its birth and baptism, am here on its arrival at the age of manhood, and hope to be present at its wedding, with my good wishes for its permanent and future prosperity. May its death be in the far, far future !

The organization and maintenance of dental societies have become a necessity of the age. We cannot, as members of one of the noblest professions, stand alone and achieve the highest good that can be

reached without them. This must be done by combined effort, by calling together the representatives of all its possibilities, so that we may have for our guidance all that is best, all that is highest, as we strive to reach a more elevated plane upon which to stand. It is not in the nature of things that we should stand still; we must either advance or retrograde. In being brought together on a common platform, we are in a position to learn from one another. A man standing alone cannot see his own mistakes and shortcomings as well as his neighbor can see them for him. It is not always necessary for his friend to speak of this defect to his neighbor, but in such communion as we have here the light may so shine that all can read their own lesson without direct personal intercourse on that particular point. How far, as members of this Society, we have fallen short of this illumination of the mind for the reception of advanced thought, I must leave to others to determine. But I believe there is a healthy sentiment in the hearts of our members, and a desire for light on every subject connected with our profession, and this desire has been quickened into being by just such personal and professional intercourse as we have in our annual assemblages on occasions like the present.

Thoughts similar to these, I have no doubt, actuated those pioneers who conceived the idea of associated effort in thus originating our State Society, and calling together in one body those who by their labors have thus produced the present successful condition of our consolidated profession.

A rallying cry went forth throughout our State in the manner of the following call, and it is so much in accordance with the plan which I have pursued in this paper that I will transcribe it in full, with the names of the signers thereto:

The entire dental profession of the State of New Jersey are hereby cordially invited to meet in convention in the city of Trenton, Tuesday and Wednesday, October 25 and 26, A.D. 1870, for the purpose of forming a State Dental Society, and to devise and adopt such other measures as may be deemed essential to our mutual improvement and for the elevation of our common profession.

Let no dentist who has the good of his profession at heart stay away. Let us all be there, and by our action in convention show our sister States that New Jersey is in full harmony with them in any movement that will tend to advance the standard of the profession of our choice.

(Signed)

JACOB PERKINS, Beverly, N. J.

LEO H. DELANGE, Bordentown, N. J.

A. W. KINGSLEY, Elizabeth, N. J.

A. A. PEARCE, Elizabeth, N. J.

C. E. TALLMAN, Freehold, N. J.

S. W. DICKERSON, Hackettstown, N. J.

J. R. GOBLE, Hoboken, N. J.

D. C. MCNAUGHTON, Jersey City, N. J.

J. HAYHURST, Lambertville, N. J.

J. S. SIMMERMAN, Millville, N. J.

C. S. STOCKTON, Mt. Holly, N. J.	J. W. POOL, Newton, N. J.
I. P. GERAN, Matawan, N. J.	E. F. HANKS, Rahway, N. J.
T. N. BRADFIELD, Newark, N. J.	CHAS. DIPPOLT, Trenton, N. J.
E. H. BUNTING, SR., Newark, N. J.	L. E. READING, Trenton, N. J.
A. G. P. COLBURN, Newark, N. J.	THOS. S. STEVENS, Trenton, N. J.
G. F. J. COLBURN, Newark, N. J.	T. B. THORN, Trenton, N. J.
A. W. CRANE, Newark, N. J.	G. R. CHAMBERS, Vineland, N. J.
J. R. REID, Newark, N. J.	J. L. TROWBRIDGE, Washington, N. J.
G. B. GARRISON, Newton, N. J.	

There are *twenty-seven* of these pioneers, whose names should be preserved on perpetual record, that those who should come after them and who would enjoy their labors might be reminded as to whom they were indebted for the successful launching of their venture on the great public sea of professional societies.

In comparing this list with the one attached to the announcement of our present meeting, we find only one single name remaining who was at the birth of our Society in 1870, and that name is C. S. Stockton, at that time of Mt. Holly. Dr. Stockton is to be congratulated in thus remaining steadfast and faithful out of the list of twenty-seven. He has been honored by the Society with all the offices in its gift from President down,—President, Vice-President, Secretary, Executive Committee, Examining Board, and Prosecutor,—and I believe he has filled them all with fidelity and to the satisfaction of the Society ; and, whether he has been present with us at our annual gatherings and attending to his duties as a faithful officer, or traveling for his health among the crowned heads of Europe, or attending some dental association at some distance in a remote State, he seems to have remembered us here at home. All hail to Dr. Stockton, of Newark !

I would like to say just here that as the history of a society is in a greater or less degree the history of those who compose it, therefore I hope I shall be pardoned if I devote a considerable space hereafter to speaking of some members who have been eminent in promoting the success of the body under consideration—both of the living and of the dead.

My pen seems to linger at the point of time at which we came into being, and to have the propensity to describe persons and incidents which were prominent at that time. It may be that this is on account of the uncertainty of our undertaking. Failure was predicted on all sides, and even those who worked hardest for a successful issue put rather a forced show of confidence in our conduct and behavior.

The anxiety with which the campaign was opened in the beginning is well told by the President in his opening address at our annual

meeting in 1878. The idea of establishing a State Society originated with him by a question from a dental magazine as to whether or not there was in the State of New Jersey a dental society. It was answered in the negative (I quote from the minutes). "That answer stung me to the quick, and I resolved, if perseverance and hard work would give her one, she should have it. I set to work at once, and never rested night or day until it was an accomplished fact." After speaking of his many discouragements, he says, further, "Finally the time came to go to Trenton. I went, but, as the old darky said, I felt 'mighty lonesome' when I realized what I was doing. I had gone to the expense of sending circulars all over the State,—wasted time and money going to Trenton, Newark, Elizabeth, and other places to call on dentists; had actually hired a hall, and perhaps the whole thing would prove a fizzle and no one would be there to meet me. But the result paid for all anxiety. We had a splendid meeting, perfected our organization, and at last the New Jersey State Dental Society was an accomplished fact. One of the members present, in the exuberance of his feelings, said, 'May it continue in existence so long as there are teeth to fill and dentists to fill them!'"

On March 14, 1873, our Society was incorporated under the laws of the State of New Jersey.

On February 17, 1880, there was a supplement passed that no one should practice dentistry who did not hold a diploma from some acknowledged reputable dental college or a certificate from a Board of Examiners appointed by this Society.

On March 4, 1884, another supplement was passed, requiring a practitioner to be registered in the clerk's office in the county in which he practiced.

On April 7, 1890, an act was passed restoring the office of the Examining Board and combining with it a requisition for registry, etc.

This brings us down to the present time, so far as the enactments of the law are concerned for the government of our Society, defining clearly the relation existing between us and the public at large.

Now, when we look at the small nucleus of twenty-seven, from which we started, and compare it with our present membership, which is seventy-two active members, with thirty honorary members,—making one hundred and two in all,—and take into consideration, too, those who have fallen out by the wayside, either from becoming weary or indifferent or have been called into the higher life, beholding the ranks filled up to the present condition, have we not just cause to congratulate ourselves on our present prosperity? Have we not cause

to rejoice in the brightness of our future prospect? It is indeed a day that may well be given to heartfelt joy and rejoicing on this our twenty-first anniversary.

Permit me to make another quotation from the President's address of 1878, in which he says, "In the past eight years we have had the following Presidents: First we had the dignified and solid Hayhurst; second and third, the wise and witty Kingsley; fourth, the calm and sedate Cosad; fifth, the hospitable and ingenious Brown; sixth, the versatile Stockton; seventh, the facile Welch." Here the adjectives that may denote their individuality must cease, as I should be at a loss to find enough to go around. But the list will be filled out: E. F. Hanks, C. A. Meeker, F. A. Levy, J. C. Clarke, F. C. Barlow, Jas. G. Palmer, E. H. Bunting, Sr., J. W. Scarborough, W. Pinney, A. R. Eaton, G. Carleton Brown, H. A. Hull, S. C. G. Watkins, and G. E. Adams.

These gentlemen have been chosen to preside over the deliberations of our body, not in a haphazard way, but because they were representative men in some department of dental science, and who had by their industry and talent exhibited their fitness to be leaders of others in advancing the welfare of our Society; and, gentlemen, you will bear me witness that the elevation to this station has never been misplaced. But our work has gone on peacefully and harmoniously, with just enough friction to keep the waters from stagnating, just enough abrasion to sharpen up the faculties of members who came in friendly collision with one another, just sufficient opposition to elicit the truth during the many amicable contests that have taken place during our sessions.

The Society has done the very best that it could for them. It has bestowed upon them the most honorable position in its gift, and I am conscious of what I am saying when I assert that for this honor conferred upon them was a sentiment of gratification created in the heart of each one who thus stood prominent and exalted in its ranks, that they will never forget.

I can say for myself that, although I have been connected with many societies during my somewhat lengthened term of years, I can say with truth that I never was more gratified in my life than when I was the first chosen President of our Society. I was proud of it then, and I am prouder of it now, and may I not say that I hope that this honest pride will never cease, but continue to grow broader and higher as long as life shall endure.

And this feeling of gratitude toward the membership of our body,

for honoring them, will reflect itself back to the donors and will make the labor of presiding over the sessions one of love. And when our efforts are made in this spirit the whole of our faculties will respond, in the exercise of our best judgment for the promotion of the welfare of our honored object.

Not long ago the question was asked in my hearing, To whom may be attributed the greatest influence of molding our Society and keeping it in its present prosperous position? The query was not answered, perhaps could not be answered so as to be universally assented to. While some of the members who have been enumerated among the Presidents have no doubt exerted a powerful influence in that direction, yet it cannot be claimed that they have done it in all respects.

There are two members, at least, although they have both been honored by being placed at the head of our Society, who have been a power in promoting our success. I allude to our present Treasurer and Secretary.

Dr. Geo. C. Brown has been for a long time the faithful guardian of our funds. Dr. Brown was first elected Treasurer in 1872, and has been continuously, with slight intermission, until the present time. We all appreciate his hospitality and acknowledge his kindness of heart, his honesty, zeal, and industry in promoting the interests of our Society. He has been with us so long that he seems almost as if he ought to be recorded with the brave twenty-seven pioneers, as I have styled them in a former page of this paper.

And Dr. Chas. A. Meeker, our present Secretary, to him also belongs the praise of long and arduous services in our behalf. To his energy, care, and perseverance we owe much. His position is no sinecure, but if the requirements of the office are fulfilled, as they have been, there is no let-up, but there must be a continued draught on his time and resources. Do the members of the Society appreciate them? I think they do, but it is an old saying that "virtue is its own reward." But it is a very cold way of acknowledging obligations.

We turn now from the living to the dead, from those who have not as yet rounded out their lives to those who have done what was before them, and whether or not it be the best that they could have done, we must leave to the great Judge of all. Of course, it will be expected for me to speak of those who were nearest to me in age, in sympathy, and interest.

I allude to Drs. Cosad, A. A. Pearce, and Jenks. In my intimacy with them I found them conscientious in all things relating to their profession. Dr. Cosad was for a long time a member of the Board of

Examiners with which I was so long connected ; and I know from personal contact that what he did in the way of his duty in that position was done to the best of his ability. The other two I believe never held any office in the Society, yet they always manifested their interest by their presence at all our meetings. But they have gone, and a pleasant memory I have no doubt will follow them.

Dr. John W. Scarborough was one of the kind of men whom the world at large never knows. He was so painfully diffident and so modest and retiring that very few, even of those who were nearest to him, ever got close enough to him to know his true worth. He was sensible of his defective education, that should have been acquired in his younger days ; so much so that he could never feel that confidence in himself that would have brought him into prominence, for he was a thinker in his way. But owing to his modest estimate of himself he was easily drawn aside from the path which his own better judgment had marked out, and here was the rock on which he split. Unfortunate in his domestic relations, and led astray by a designing and selfish fraud, with his whole being absorbed in the course he was pursuing until at last the sunlight of truth broke upon him. It was too much, human nature could not endure it, and he died with a broken heart.

I have left to the *last*, but by no means the *least*, one who has done more probably than any one man to create an interest in the proceedings of our Society. I allude to Dr. W. H. Atkinson. Since we last met he has been gathered to his fathers. His familiar voice will not be heard any more, rousing us into exertion or restraining us in error. We shall miss him, as we would miss any man who in all his ways was so earnest, so fearless, in his advocacy of his views ; who sought the demonstration of his propositions with such power as to force conviction on the minds of all his hearers. He is gone, but his works and his influence remain behind him as a precious legacy to those who love true devotion to the cause he so earnestly espoused. Our Society is not the only one to mourn his loss ; but wherever the science of dentistry has found a foothold sufficient to formulate and maintain a society, there his absence will be felt. The territory of his labors was not confined to State lines, but was as broad as his own views, and as nearly universal as the desires and ability of one man can make them.

This is his character as he was known to the professional world. As an intimate of his, and one to whom in a private way he had revealed himself, I would like to show him in another light, as one who had a tender, almost a womanish heart. I had often wondered why

it was he manifested toward me such a marked regard, in debate always speaking in such a manner of anything that I produced or advocated as to entirely avoid that harshness that was so often apparent in his manner toward others. The reason was revealed to me on the occasion of the souvenir dinner to Dr. Wilhelm Herbst, at our annual meeting in 1886.

On that night I had been called to answer to the toast, "The New Jersey State Dental Society." It was after midnight. Dr. Atkinson was called as the next speaker. Just as he rose I said to him in an undertone, "Make it short." He said, "My friend and Quaker brother here says, 'Make it short.' I take him as being one of the representatives of the angel band that governs the intellections of my consciousness."

If he spoke this in true sincerity,—and I *believed* he did,—then the revelation came to me that would account for this manifestation of tender regard to me, and I loved the man for it.

I have endeavored to portray the mode of our beginning, have traced the advance, told of the struggles we have endured. I have spoken of many of those who made it a duty to have the Society live and prosper, and have brought the history down to this day, the twenty-first anniversary of our existence. What next? Look abroad and compare ourselves with like institutions in other States, and say, Have we not cause to congratulate ourselves on our present prosperity, and look with gratified eyes at the bright opening in the future? Let us approach that future with confidence, in a firm reliance on the right, using all honest endeavor to reach higher and higher, yearning after perfection yet never obtaining it, but striving after it in all honest purposes of head and heart, and we cannot know a failure.

RESPONSE.

BY B. F. LUCKEY, D.D.S., PATERSON.

Birthday parties are always very agreeable affairs, and the birthday celebration that it has been my privilege and yours to attend this afternoon is no exception. To respond to this most complete and comprehensive history of the State Society, which, however, I think is the first and only comprehensive history we have ever had in a continuous form, is a matter which would require more time than I have had to overlook what Dr. Hayhurst has written. No opportunity has been afforded me to write out in a consecutive way any proper response to it. I do not know that it would be really necessary for any such per-

formance on my part. He brings before us to-day, in review, in a history of twenty-one years, pictures of the past members of the Society, those who still live, and those who have gone over the borderland into the great beyond—he says “into the higher life.” I hope so, each and every one of them. He has pictured the sacrifices that some of them have made, what they have done for the establishment and advancement of our Society, and its relation to the dental profession at large. The doctor himself is the only one of them left. He is our father, and to-day I think we could do no less than pay homage to him as the father of this Society. He still honors us with a membership on the honorary list.

Instead of taking up time further to go back and rehearse whatever may be within the ken of my observation or remembrance of the Society, perhaps it will be more profitable for me simply to prophesy what this Society may do, not only for itself, but for the profession at large.

The Society has always held, since its existence began, a position in the dental world that was second to but few, and certainly within a few years second to no dental organization in the United States. Its record and its reputation for aggressiveness, for progressiveness, for devotion to duty, for devotion to the interests of the dental profession in general, have been second, I think, to those of no other dental organization in the land. Its members, without exception, have been willing to devote time, to devote money, to devote energy to the advancement of any and every cause that could in any way benefit or elevate the profession of dentistry as a whole. It has been devoted to the interests of the needy. No call was ever made upon this Society for any brother who in distress or misfortune was compelled to unmask himself and show his wounds, his rags, and his tatters to his brethren, but what was met with a hearty and warm response. No man died in the profession anywhere in the country when it was felt necessary to call upon the profession for the maintenance or protection of his family, that a call was made in vain upon the New Jersey State Dental Association. No member of the profession died whose memory was not honored by the members of this Association. Its position in the American Dental Association, which as the representative association of America probably will mark the highest attainment that a man can reach in a politico-dental way, has been equal to that of most any dental association. I think its position in regard to membership is as great as that of any other association in the country.

Somewhat of what I wished to say in connection with the relation

of this Association with the coming Dental Congress in Chicago has been made almost unnecessary by a discussion which took place here this morning, but before I go into that I want to interject into my remarks a desire, not only upon my part individually, but upon the part of the official members of this Association, that the representation of this Association at Saratoga at the American Association in the first week of August shall be large, for the interest of the Association; that every member who can, conveniently or inconveniently, do so under any condition or circumstances, will obtain his certificate from the Secretary of this Association, and attend as a delegate, and become a permanent member.

As to our relation to the Dental Congress to be held in 1893 in Chicago, it is, I think, well understood that the honor of first broaching that subject is due entirely to the New Jersey State Dental Association. In executive meeting that matter was brought up, I think, first by Dr. Charles A. Meeker, who not only proposed this measure, and the establishing of a committee of ten to meet other committees from other Societies, but also drafted a plan of work upon which lines that Congress should be organized and worked, and which scheme has been practically carried out in the organization of this Congress, so-called. Unfortunately for the reputation, or the honor, of New Jersey, perhaps through an oversight,—it is charitable to look upon it in that light,—New Jersey has received no credit whatever for this position which she took. That committee was appointed to meet like committees at the Hoffman House on the 2d of April, 1890. A meeting was held, and representatives from many organizations from many parts of the United States met there. The sense of the meeting was that such a scheme should not be carried out upon the responsibility of any State or local organization; that the better plan would be to refer the whole matter to the American and Southern Dental Associations, which was done, and in doing so the members present believed they were doing that which was for the better interests of the dental profession, regardless of their own individual interests. In the organization of the committees for the management and control of the Dental Congress, New Jersey was entirely forgotten so far as personal honor was concerned. That is the only point I raise against them. New Jersey should have been remembered. It should have been given credit for what it did. I only mention this to show that New Jersey is in the van in all that regards progress and advancement in dentistry, because every one of us are dentists from our heels to our head, and whatever will benefit the dental profession is what will interest us.

I don't know anything more that I can say to supplement Dr. Hayhurst's paper, except to hope that the future will bring to us as much prosperity as the past has ; that the members who come in as new men to reinvigorate and strengthen us, and build us up, and enlarge us, will bring with them the same energy, intensity of purpose, devotion to their professional duties and interests, that the members who have been identified with this Society have manifested in the past twenty-one years. (Applause.)

UNION MEETING
OF THE
New Jersey and Pennsylvania State
Dental Societies.

PREFATORY NOTE.

THE task of editing the proceedings of the union meeting of the dental societies of Pennsylvania and New Jersey, held at Asbury Park, July, 1891, was, at the request of the committees of both societies, delegated to the subscriber. While feeling able to please the members of the New Jersey society, criticism was feared from some members of so large and important a society as Pennsylvania ; still it is to be hoped I will be leniently dealt with, as I have done the best I know how, and feel indebted to The S. S. White Dental Manufacturing Company for favors extended in the preparation thereof.

CHARLES A. MEEKER, D.D.S.

NEWARK, N. J.

MINUTES OF THE JOINT SESSIONS
OF THE
New Jersey and Pennsylvania State
Dental Societies.

WEDNESDAY, JULY 15, 1891.

THE Convention was called to order at 8 P.M., with Presidents L. Ashley Faught, of Philadelphia, and George Emery Adams, of South Orange, in the chair.

President Faught read his annual address.

President Adams read his annual address.

President Adams. Dr. Faught's paper is open for discussion, gentlemen.

Dr. Meeker moved a committee of three from each Society to draft resolutions in regard to the addresses of both Presidents, to report at the session next morning, and that the committees be appointed by the President of each Society. Both motions were carried, and the committees were subsequently appointed, as follows: for Pennsylvania, Drs. Wm. H. Trueman, Joseph Head, and M. H. Cryer; for New Jersey, Drs. F. C. Barlow, Fred. A. Levy, and E. M. Beesley.

On motion, the Convention adjourned to Thursday, July 16, at 10 A.M.

THURSDAY, JULY 16, 1891—MORNING SESSION.

The Convention was called to order by President Adams at 10 A.M., Presidents Faught and Adams in the chair.

The committees on the Presidents' Addresses were called, and Dr. W. H. Trueman reported, from the Pennsylvania Society, that the committee had examined the address of President Faught and recommended that it be published.

The report was accepted.

Dr. Stellwagen asked for a reconsideration of the vote.

A member asked if the gentleman voted in the affirmative.

Dr. Stellwagen. I did not vote at all.

President Faught. As the presidential address under consideration is my own personal one, I will entertain a motion to reconsider.

A motion to reconsider was made by Dr. J. A. Todd, and adopted.

Dr. Stellwagen. I think the committee have not unanimously reported, or not unanimously voted for a report yet. Dr. Trueman has not heard from all the members of the committee, and as the address, if printed as it was delivered yesterday evening, should be received and formally voted to be printed by the Society, it would, to a certain extent, establish the address as the views of the Society.

President Faught. The gentleman is out of order. The question is the reconsidering of the vote upon the report, and not the report itself.

Dr. Stellwagen. I am trying to state my reasons why the report should not be accepted until you hear the minority report, and the reconsideration of the adoption of that report is for the reason that there is a minority report to be made.

President Faught. Are you ready for the question?

A division was called for.

President Faught. Those in favor will please rise.

Fifteen votes were recorded in the affirmative ; four votes were reported in the negative.

President Faught. The ayes have it. The question now is upon the report of the committee. The motion now is that the report be accepted and the address published.

Dr. Peirce. It has been stated that there is a minority report ; it seems to me due the committee that we wait until that report is ready.

Dr. Stellwagen. If the motion could be withdrawn for a few minutes, the minority report may be brought up later on.

President Faught. Does Dr. Todd withdraw his motion?

Dr. Todd. I do not.

Dr. Stellwagen. I am compelled, then, to move that the motion be laid on the table until it can be taken up later on, because it is a subject which will probably bring some discussion. I hardly conceive that the Society is prepared to indorse everything that is said in that address without at least carefully reading it over. It is not only due to the writer, the President, but it is due to the Society that it should fully understand what it is doing.

The motion to lay on the table was carried.

President Faught. I wish to announce that Dr. Head will demonstrate the application of rigid base and trial plates in the clinic to-day. The first paper on the programme is by Professor Chas. Mayr, of

Springfield, Mass., who has not yet arrived. We will listen to the presentation of a very interesting report of a case by Dr. H. Newton Young, of Wilkes-Barre.

Dr. Young then read a report of a case of acromegaly.

Discussed by Drs. Head, Young, Beck, Peirce, Jack, and Stockton.

"Incidents of Office Practice" were discussed by Drs. Osmun, Watkins, Head, Root, and Stockton.

President Adams. Dr. Marvin, who will not be able to be here, has sent his paper, which will be read by Dr. Watkins.

Dr. Watkins read Dr. Marvin's paper, which was entitled, "Pulicide: the Best Assurance of Safety and Usefulness."

Responded to by Dr. W. H. Trueman, for the Pennsylvania Society, and Dr. C. S. Stockton, for the New Jersey Society.

President Faught. The discussion will be deferred until this evening, when it will be continued with a paper by Dr. Louis Jack, of Philadelphia, with specimens and examples to show us. I now call for the report of the committee on the Annual Address of the President of the New Jersey State Society.

The report was then read, as follows :

MR. PRESIDENT AND GENTLEMEN :

Your committee take great pleasure in heartily indorsing the President's address as a whole, and beg leave to reiterate some of the points contained therein.

The President has called attention to several of the great movements which, this Society having inaugurated them, have become national. Not the least of these is the one referring to "the abolition of patents for all operations upon and in the human mouth." National this movement must be. Affecting as it does the liberty of every dental practitioner in the United States, it behooves us to put our individual shoulders to the wheel and leave no politician undisturbed whose influence can be made to weigh for the accomplishment of our purpose.

He has also called attention to a proposed amendment to our already excellent dental law, curtailing the indiscriminate extraction of teeth by the laity. This is commendable, and will undoubtedly strengthen the legal status of our State Board of Registration and Examination. Do not let us, however, lapse into a feeling of security because of good laws ; as laws, however excellent, are of little value unless attended by personal work and vigilance on the part of those who are most nearly affected by their non-enforcement.

A lack of time prevents our doing complete justice to this address, but, as it is fresh in your minds, we trust that you will do it full justice by a hearty discussion.

R. M. SANGER,	} Committee.
S. C. G. WATKINS,	
B. F. LUCKEY,	

Dr. Sanger, who presented the report, prefaced its reading by the statement that its principal object was to call out a discussion on the address.

After the reading, on motion, the report was received and the committee discharged with the thanks of the meeting, the subject being left open for discussion.

The President. We will be pleased to hear from any of the members of the New Jersey State Society or the Pennsylvania State Society.

The address was discussed by Drs. Watkins and Osmun.

Dr. Head. I move that the report of the Committee on President's Address be taken from the table and opened for discussion. Carried.

President Faught. The report of the committee is that the address be received and that it be published. What disposition will you make of this report? It has been moved that it be accepted, and the question is open for discussion.

Dr. Bassett. While I am entirely in favor of the motion as carried originally, to accept the report and print the addresses, I voted to reconsider, and also to place it on the table in order not to shut off any discussion which might be brought out by the minority. It seems that if anyone has anything to say upon the subject, now would be a good time to say it; and hearing both sides of the question, we can finally dispose of the matter.

Dr. Stellwagen. I would rather that it would lie on the table longer. The minority report is being written; it is not well to be precipitate. The minority of the committee would like to see the writer of the paper before they make their report. If it is necessary that the business must be conducted immediately, a rough copy of the report can be brought in, but it would be better to give the minority time in making out the report.

Dr. Head. How long will that require?

Dr. Stellwagen. If the minority consults with the writer of the paper, we would have to wait until after our adjournment, till tomorrow morning.

Dr. Head. In order to give the minority time to report, I will withdraw my motion.

Dr. Boice. Is it the entire report of the committee? Do they report, or a majority of the committee? I understood it was the report of the committee.

President Faught. The Chair understood that this was a report of the committee, and if made in that way, it was supposed that it was

the report unanimously of the committee. But after the question had been stated and the vote had been taken, the Chair was put in the position of settling the question upon his own report, and though the Chair did not believe the gentleman opening the discussion was in order, he did not wish to cut off the discussion upon his own paper, and therefore allowed the motion to lie upon the table, interpreting that it was the report of the committee.

Dr. Boice. I did not know that a person who was not on the committee could make a minority report.

President Faught. The Chair does not understand that the gentleman laying the report of the committee upon the table was to make a minority report, but that the gentleman wished to give the minority a chance to report. The Chair does not understand that the minority of the committee has asked for the time in any way.

Dr. Head. Why could not this discussion be carried on quite as well through the print as at present? What object will be gained by taking up the time of the members here, when it could be done much more fairly and much more concisely through the medium of the press?

Dr. Guerry. May I ask what the motion before the house is?

President Faught. The question before the house is the report of the committee, that the address be received and a copy of it published. The motion has opened the matter for discussion, and it is now in the hands of the Convention.

Dr. Guerry. I was appointed on that committee. I believe the committee has not really been together. I have seen a partial report, which I disagree with, and if the other two members agree to that, then I will be in the minority and have a report to hand in.

President Faught. The Chair will be pleased to hear the minority report.

Dr. Guerry. I will ask the Secretary to read it.

The Secretary read the minority report.*

President Faught. You have before you now the majority and minority reports upon the address of the President of the Pennsylvania State Society. The subject has been opened for discussion. As a motion was made to receive the report of the majority, it would be well to take action before discussion upon the report of the minority. What action will you take?

Dr. Head. I should be strongly in favor of having the President's speech printed; not indorsed by the Society, but simply received

* Afterwards returned to Dr. Stellwagen at his request.

and printed, in order that it may be thoroughly read and discussed through the print. Under the circumstances I would also propose that the reports of both the minority and majority should likewise be printed, in order that those reading may thoroughly understand the situation, and express their views clearly and concisely to the general public.

Dr. Peirce. I suppose the idea is that the proceedings of these two Societies will be published in one volume, and I simply ask the question as to who has the right to vote; whether both the New Jersey and Pennsylvania delegates, or only the Pennsylvania.

President Faught. The vote on this question is entirely in the hands of the Pennsylvania Society.

Moved and seconded that the matter be laid upon the table until a special meeting of the Pennsylvania State Dental Society, and that such special meeting be called for nine o'clock.

President Faught. Before putting this motion, the Chair would state, as a matter of privilege, that this address was made in open meeting, before both Societies, and it is the privilege of every member of either Society to remain and listen to the discussion or retire. I do not think this report should be carried to a private meeting and read, ventilated, and disposed of there. I would like whatever is done to be done here. As a personal request I would ask that no such motion be decided to be the opinion and voice of this meeting.

Dr. Stellwagen. I withdraw that portion of it which relates to the Pennsylvania State Dental Society, and move that we lay it upon the table until nine o'clock to-morrow morning, and then it can be taken up and discussed by those who wish to discuss it.

President Faught. There is no other business before the house, and I feel called upon to insist that any action taken upon this matter be taken now.

Dr. Stockton. I make this motion, that the paper and that the report of both committees be published in the Proceedings.

Seconded and carried.

Dr. Stockton. I would ask that two or three minutes be granted to Dr. Noble, who has a matter he wishes to present.

Dr. Noble. Gentlemen, I have a matter very much at heart, and it has been emphasized strongly by the addresses we heard last evening from the two Presidents. It is in reference to dental legislation and dental laws. You in the States have had laws in operation now for some years. We have no dental law in the District of Columbia, and we are dependent upon the Congressmen whom you

in the States see fit to elect. We have been trying eight or ten years, and have presented a law before Congress, and have worked faithfully and hard to obtain the passage of that law. We meet with no special or particular objection, but inattention ; we cannot get the attention of Congressmen to our little District matter. We have several times been on the point of getting it through, and have had the papers indorsed by the American organization. Now, I ask no official action of this Society, but what I want is to ask personal attention. If any of you are acquainted with members of Congress from Pennsylvania and New Jersey, as no doubt you are, please use your personal efforts, so that when called on before Congress they will pass this law. We met with opposition from one member from Pennsylvania, but I believe by personal interviews that was entirely obliterated. We ask and beg of you to use your influence with any members of Congress from your place. I thank you for affording me this opportunity of making this statement, of expressing my gratitude at being with you, of hearing the reports so far, and of meeting you personally of both States.

Adjourned to 8 o'clock P.M.

EVENING SESSION.

Called to order at 8 P.M., with both Presidents in the chair.

President Faught called for the report of the Clinical Conference Committee.

Dr. Magill reported progress.

President Faught. The report of the Clinical Committee.

The Clinical Committee, through its Chairman, Dr. Watkins, presented the following report, which was, on motion, received and the committee continued :

Dr. Rufus G. Stanbrough, of New York city, exhibited the process of crowning roots with special instruments, the primary idea being that the exposed base of the root shall be so shaped that the crown will exactly fit the exposed end of the root.

Dr. Canady, of Albany, treated the root-canal of the left upper cuspid.

Dr. C. M. Richmond, of New York, crowned a left superior bicuspid with a gold crown.

Dr. J. H. Whiteside, of Youngstown, O., filled the anterior approximal cavity in the second superior bicuspid with tin and gold, using Robinson's felt tin, and finishing with gold, using smooth-pointed pluggers.

Dr. Burton C. Russell, of Keene, N. H., inserted a porcelain inlay in the labial surface of the left lateral, making the inlay from an enamel rod or stick. A very beautiful and artistic operation.

Dr. C. A. Timme exhibited the process of enameling the labial surfaces of gold crowns, and also of enameling an artificial piece mounted on 18-k. gold plate. He also inserted a glass filling in the labial surface of a lateral.

Dr. Beck, of Wilkes-Barre, Pa., filled an upper cuspid with White's new plastic gold.

Dr. Parr, of New York, inserted an Evans gold crown, occupying a very short time in its completion,—only about five minutes,—and being a very satisfactory operation.

The clinic received a great deal of earnest attention, and the operators were surrounded constantly with throngs of eager on-lookers desiring to learn by practical observation the new and advanced methods of practice.

S. C. G. WATKINS,	} <i>Clinic Committee.</i>
HOWARD E. ROBERTS,	
OSCAR ADELBERG,	

President Faught. The next order of business is reports of committees, regular and special.

Dr. Magill. Mr. President: This morning, before the close of our session, the motion was made to accept and place upon record the minority report of the Committee on President's Address. I move the reconsideration of that vote. Seconded and carried.

Dr. Magill. Mr. President: I further move, I believe as the sense of the Pennsylvania Society or of the members here present, that we, as a united body, refuse to accept that minority report. It does not express the sense of the members. It conveys a wrong impression. We are satisfied that all the statements conveyed in the general terms which the President used in his address are based upon facts which are easily proven; that no names have been used; no individuals have been involved at all in anything that was said, and we are satisfied and ready to sustain our President, so far as Pennsylvanians are concerned, in the position he has taken. We hope the members of the New Jersey Society do not see that there is anything wrong or discourteous or untruthful in what our President has said. He has dealt in general statements; he believes and we believe the general truth of what he has said. This, however, is not the place for discourtesy; it is not the place for such a report to be received, and we are not satisfied to leave it as it is. I trust to your good sense, and, placing yourselves in our place, for your favorable vote upon this motion.

I move you, sir, that we refuse to receive the minority report as it was rendered to us this morning.

Motion seconded.

Dr. Stellwagen. I feel that unfortunately the position that I occupy compels me to call the attention of the Society to the fact that the

minority report truthfully and clearly expresses, that there was an insidious inference to be drawn from the remarks, or portions of the remarks, in the address. And the desire on my part as an individual of this Association is to see that the Association shall not commit itself by the acceptance of an address without the opportunity to express on all sides the differences in view that the question brought up. The first point is that there are men in this room, I take it, conscientiously, earnestly, and sincerely desirous of advancing the dental profession. We have different views of how that may be done. I have different views of the correctness of others' views in the matter, and therefore I think that a discussion on the question would be healthy and beneficial for us all. There is growing a difference between certain views that are held by the colleges, or by the profession that are interested in the colleges, and certain others that are interested in the Dental Examining Boards. "A house divided against itself may not stand," and I wish, if it is possible to do so, that these differences of views should be carefully considered ; and if there is wrong, or if there are hasty views on either side, the opportunity will be given by a thorough discussion to correct that which is wrong. It is not necessary for me to say anything about the earnestness of these dental colleges. I have been acquainted with the one I am attached to now since 1865. I entered there as a demonstrator, and I know that many of those that are in the faculty expended more money than they ever received from the classes. They were employed steadily and faithfully, and I believe as honestly as it was possible for a professional man to act. The college grew, and now it is in a better position than it was then. After the years of experience which some of the members of that faculty have had,—years of experience which began, I think, before some who are here saw the light of day ; years of devotion, years of determination to make the dental profession the equal, and if possible, the superior of any other,—they feel, they must of necessity feel, that to carp over small or trifling matters may lead to a misunderstanding of the position.

If you will look at the dental profession to-day and see what it is, see how noble, how broad, and how grand it is, you must admit that it has improved in the last twenty-five or thirty years. If, then, this improvement has taken place, I think it is fair and just, I think it is due to some, at least, who have labored in that field, to acknowledge that they have diligently, steadily, and honestly worked for the good and the broadening of that profession. I hear bruited about occasionally an insinuation, as if there was dissatisfaction. Now, wherever

there is dissatisfaction, the clearer and plainer it is expressed the better opportunity there is to avoid that dissatisfaction, whatever it may be, or the cause for that dissatisfaction.

Now, I wish to ask this body one question,—and I would rather that it had been asked by someone else,—and that is, Is it not a fact that men who devote their lives to the teaching and to the examination of the student, who take him as he enters the school, and have him under their eye for two years,—are these men not more likely to become better acquainted with each individual's ability than those who examine him but for a short time? To this it would seem to me there can be but one answer. Even if the man for thirty years had done nothing but attempt to reach a high goal, there ought to be in that time some improvement made, and that improvement ought to be, from the mere fact of his daily attention to it, greater than if he only for a few weeks every year devoted his time to an examination.

The point that is first taken exception to is the enormous growth of the profession. That is easily accounted for by the fact that there is an enormous increase in the demand for dental services. I remember very well when it was hardly supposed to be necessary for the teeth of children, or indeed the teeth of adults, to be examined or looked at. That has gradually given way in most of our large communities to a feeling—

President Faught. Allow me to interrupt the gentleman a moment. The gentleman is now discussing the presidential address, and is not confining himself to the rejection of the minority report.

Dr. Clark. If I understand correctly the motion that was made, it was to reconsider the vote on the adoption of the minority report. I would ask what is before this body?

The President. A motion to reject the minority report.

Dr. Clark. Before any further discussion, I would like that report read, so we may know just exactly what it contains.

Dr. Stellwagen. I have no objection to yielding the floor in order that it may be read.

President Faught. The report may be read and then Dr. Stellwagen may resume, confining himself to the rejection of the minority report.

The minority report was read by the Secretary.

President Faught. You have heard the reading of the report. If Dr. Stellwagen wishes to speak to the question I will be pleased to recognize him.

Dr. Stellwagen. In speaking to the question I do not see how I

can avoid showing where the error is and what the objection is to the non-acceptance of the minority report, because it seems to me that both sides of the question should be fairly, openly, and squarely understood, and that is the only way that I can see that we can have that firm union and unanimity of sentiment which the dental profession must have if it wants to reach its proper altitude. We must not be distrustful of one another. We must feel that we are brothers and that we can go to each other and say, I differ with you on this matter ; am I right or are you right ? It is the only way, first to see that the foundations beneath us are all, stone by stone, put in solidly and cemented with friendship, backed with the knowledge of our oneness of purpose to advance this profession and to elevate it.

I think that this insinuation with regard to the increase in the size of the classes is a mistake, and I am trying to explain why it is that a greater number of dentists are required to answer the purposes of the community to-day than were thirty or twenty-five or ten years ago. Even admitting that the community itself does not increase in number, there is not a person—well, say one in one hundred, probably—that does not need dental professional services. As my friend Dr. Essig remarked to me, the practice of medicine is confined to the sick, the practice of dentistry embraces everybody. Now the community begins to perceive that the need of dental service is greater than they had supposed a few years ago, and as a result a greater number of young men are coming forward every day in order to properly prepare and fit themselves to conscientiously carry themselves upward in the dental profession as high as they are able to. In addition to that, there has been another cause for the increase of the size of the classes, and that has been due to the effect of the very wise laws in regard to dental boards, requiring that the men who enter the profession in the different States shall be qualified to enter. A few years ago it was not necessary for a man to go through a dental college. Only those went to a dental college who seemed to have had the good fortune to have their eyes opened to the fact that at a college they could study together with a number around them all bent upon the same purpose ; they would get more views ; more meat for their sustenance. There were a great many who did not see it, or for some other reason did not avail themselves of it, and entered the dental profession without going through a dental school. The Boards of Dental Examiners of various States have made it known now that there is but one road, and that is the road of knowledge. The young man looks about him ; he says, “Where can I get this

knowledge?" The next point is, having this young man wanting to get that knowledge as cheaply as possible, can we say that it is not as good because it does not cost as much? That is cheapest which is best; and if the young man says that he gets a better and more thorough instruction at one place than another, or if he gets the same instruction at two places, and one will do it for less than another, certainly the gentlemen cannot mean for one moment to say to him, "Go to a more expensive school, or the more expensive institution." It is the law of political economy.

Now, I do not think that this Society would look well if it put itself on record as recommending that that which was the least expensive was by necessity not the best.

Another point, that probably none of you realize as I have realized it, or at most comparatively few have realized it, and it is a very sad one. I have seen more than one member of the classes of medical and dental schools drop out of the march, and over their tombstone was written, "Typhoid fever," or some other disease of that kind; but if it had been written right it would have been written "Starvation." There never, I believe, for the last five or ten years, has been a class in the dental schools in Philadelphia where there has not been a poor fellow who had borrowed all he could borrow, had begged all he could beg, was on his very last dollar, and I have seen them come around at the end of the session with their eyes looking at you as if they were looking out of the grave, almost starved, in order that they might have the money to stay to the last examination. Now, then, we cannot say to these men, "Because you are poor you must not graduate." Such men as those, if they go through and hold the thread of life in their mortal body, have gone very, very high in the profession afterwards. They have learned what it was to want and to need. They have learned what it was to hold conscientiously to their purpose, and I am sure no one here will say they were any the worse for that.

There is another point. The next one. Can I have that one read?

Dr. Meeker. I would much prefer, with all due deference to the one who wrote it, that he would read that point.

Dr. Watkins. In our Society we have a standing rule that a speaker is to speak only five minutes, and I would like to make a motion that that rule be enforced in this meeting.

President Faught. I think you are in order, and I am very much pleased to hear that you have that rule, as we have that same rule in

our Society, and it can very well become the rule of this joint meeting, and I will therefore rule that the gentleman having had the five minutes, his time is up.

Dr. Stellwagen. Gentlemen, I do not wish to go contrary to the rule ; you can judge of the justice of it.

Dr. Clarke. It is not parliamentary to reject the report. The proper motion would be upon the substitution of the minority report for the majority. It is discourteous to the members to move to reject the minority report ; a proper motion is to substitute the minority report, and if it is carried, it then becomes the majority report.

President Faught. If Dr. Magill will accept that as his motion, I will hold the point well taken.

Dr. Watkins. I think we are out of order. It seems to me that that report was accepted this morning, was it not ?

President Faught. It was.

Dr. Watkins. Then I think the thing to do is for a motion to be made to reconsider that report, and if we reconsider it then we can vote for it or against it.

Dr. Magill. My understanding was that the report was not accepted, but a motion was made that it be printed in connection with the addresses ; that was the exact motion made by Dr. Stockton. That motion, as I suppose, was intended as a compromise for a moment to tide over a discussion at that time. If I am correct, there was no acceptance of the report. It is a discourteous matter to discuss in that manner the address of any President. I think it is treading on ground that is improper. The first mistake was made in appointing the committees to report upon those addresses. I think the subjects of those addresses should have been discussed last evening, and we made a mistake in accepting motions to appoint committees, and in my opinion no minority or majority committee has a right to be so discourteous as to say to the President, " We want you to take that address back, we want none of it." The President, I hold, has the same right as any other member to get up on this floor and express an opinion. In presenting his annual address he goes through the required form, and as to the general principles he enunciates, why should we question what he states in a general way ? What is there in his address for these gentlemen to fly up angrily about ? It seems to me the courteous thing was to let the addresses of the Presidents stand, unless we wished to discuss them ; and now since the mistake has been made, the shortest way to dispose of it is to refuse to have anything to do with it.

Dr. Leffmann. This body has no existence, properly so-called, because it is a joint meeting, has no constitution or by-laws, and must therefore be governed by parliamentary law, and that law would require that that minority report should be entered in connection with the majority report, and there ought to be no objection to recording in the proper place the objections submitted by the minority report ; and, furthermore, I think the programme ought to be adhered to as to the professional business rather than regular business.

Dr. Stellwagen. I think no one can read this address without saying that it is an evidence of something like want of confidence in certain colleges. That bears upon all dental schools. Come out and tell the dental schools what is the matter. I want a free discussion. If the dental schools are wrong, let them know where they are wrong. If the report is wrong, let us see where it is wrong.

(Cries of "Question, question !")

The question was put and declared carried.

Dr. Stellwagen. I call for a division, ayes and noes, so it may be recorded.

Dr. Clarke. I rise to a point of order. The gentleman calls for an aye and no vote after the result has been announced.

President Faught. I rule the gentleman out of order. The next order of business will be the reading of a paper by Dr. Louis Jack upon the subject of this morning, "Pulpicide."

Dr. Louis Jack, of Philadelphia, read his paper.

President Faught. The subject is now open for discussion. The gentlemen will confine themselves to five minutes.

The subject was discussed by Drs. W. A. Conrad, of St. Louis, Jack, and Klump.

On motion, the subject was passed.

President Faught. The next paper on the programme is by Professor Chas. Mayr, and is entitled "Anti-Antiseptics."

Professor Mayr's paper, in the absence of the author, was read by Dr. Sanger.

The response for Pennsylvania was read by Dr. Joseph Head, of Philadelphia ; for New Jersey, by Dr. George W. Weld, of New York.

Adjourned to Friday morning.

FRIDAY, JULY 17, 1891—MORNING SESSION.

Convention called to order at 10.35 A.M., both Presidents in the chair.

Three proposals to membership in the New Jersey Society—Dr. C. M. Howe, of Passaic, Dr. F. G. Maynard, of Englewood, and Dr. W. W. Hawk, of Flemington—that had been passed upon favorably, were elected.

Dr. Meeker read the resolutions of the committee on the death of Dr. Atkinson :

WHEREAS, Dr. William H. Atkinson, an honored member of this Society, having been removed from us by death, it is fitting that we should make record of the event, and of our sense of the great loss thus sustained ; therefore, be it

Resolved, That by his genial disposition, honorable character, and enthusiasm in his chosen profession, he has endeared himself to his associates and won their lasting esteem and affection by his untiring efforts in their behalf and for the advancement of dental science.

As a wise counsellor, true friend, and earnest scholar he will never again take part in our proceedings ; never again will the warm grasp of his friendly hand be felt ; no more will his words of wisdom be heard, nor will his cheering smile again brighten our gatherings.

Resolved, That our sympathies and condolence be extended to his relatives in their bereavement. While such a loss is irreparable, we cannot but be grateful to the Giver of all good that he was permitted to live such a long and useful life. Be it further

Resolved, That these resolutions be incorporated in the minutes of this Society, and that a copy be transmitted to the family of the deceased, and also to the dental journals.

C. S. STOCKTON,	} <i>Committee.</i>
H. B. VAN DORN,	
HARVEY IREDELL,	

The report of the committee was accepted and the committee discharged with thanks.

Owing to the illness of its author, a paper entitled "Demonstrations of the Methods and Results of Bacteriological Work, especially as related to Dental Pathology," by Dr. Henry Leffmann, was then read by Prof. A. P. Brubaker, of Philadelphia.

The response for the New Jersey Society was made by Domingo M. Sabater, A.B., M.D., of New York, and for the Pennsylvania Society by Edward C. Kirk, D.D.S., of Philadelphia.

The paper was further discussed by Dr. W. H. Dwinelle, of New York, after which the subject was passed.

President Adams. We will now listen to a paper by Dr. J. D. Thomas, of Philadelphia, under the title, "Nitrous Oxide Gas, viewed from a Practical Standpoint."

Dr. Thomas read his paper, which was responded to by J. Allen

Osmun, M. D. S., of Newark, for New Jersey, and Prof. S. H. Guilford, Ph. D., D. D. S., of Philadelphia, for Pennsylvania.

President Adams. The subject is now open for discussion ; please adhere to the five-minute rule.

Dr. C. Huestis, President of the Dakota State Dental Society, was introduced as a delegate.

The subject was further discussed by Drs. Conrad, Guilford, and Thomas.

On motion, the subject was passed.

President Adams. In view of having reached so near the close of the programme, it is as well to continue until all the business is finished. Nothing remains to be done but the installation of the officers.

Moved, seconded, and carried that the installation of officers be proceeded with, those of the Pennsylvania State Society taking precedence.

President Faught. I will appoint as a committee Dr. Magill and Dr. Green to conduct the newly-elected President of the Pennsylvania Dental Association to the chair. Will they please conduct Dr. Jack to the chair?

The gentlemen named thereupon escorted Dr. Jack to the stand.

President Faught. It gives me great pleasure to resign the chair to Dr. Jack.

President-elect Dr. Louis Jack. Gentlemen of the Pennsylvania State Dental Society : Allow me to thank you for the honor you have conferred upon me by electing me your President. It is the first instance in which you have conferred that pleasure and honor upon me, and I shall endeavor during my incumbency to enhance the interests of our Society in every direction in which I may see an avenue of improvement. At this time I have nothing further to say to you except to announce the committees connected with the Society.

The committees are as follows :

Executive Committee.—F. L. Bassett, D. H. McQuillen, P. K. Filbert, C. S. Beck, W. H. Fundenberg.

Publication Committee.—C. N. Peirce, W. E. Magill, C. V. Kratzer, H. N. Young, J. A. Todd, A. P. Beal, Joseph Head.

Committee on Legislative Action.—W. E. Magill, Henry Gerhart, G. W. Klump.

Committee on Enforcement of Dental Law.—L. Ashley Faught, W. H. Fundenberg, Alonzo Boice, J. C. M. Hamilton, C. P. Meaker, E. P. Kremer.

Clinical Committee.—P. K. Filbert, W. E. Van Orsdel, W. F. Fundenberg.

President Adams. I will appoint Drs. Sanger and Osmun to conduct Dr. Luckey to the chair.

The gentlemen escorted Dr. Luckey to the chair.

President Adams. Dr. Luckey, I take pleasure in welcoming you to the chair of the President. I yield to you the gavel as the insignia of your office, knowing full well your ability to fill the position far outshines that of your predecessor.

President-elect Dr. B. F. Luckey. Gentlemen of the New Jersey State Dental Society: As you were all present and heard the response of Dr. Jack upon his installation, I think it is unnecessary for me to say anything more than "Me too." I think the remarks he made would express my sentiments to you.

Dr. Osmun. As the business of the meeting is now over, I move we adjourn.

Motion seconded.

Motion put by President Jack, and the Convention was declared adjourned *sine die*.

CHAS. A. MEEKER, D.D.S.,
Secretary for New Jersey.

C. V. KRATZER, D.D.S.,
Secretary for Pennsylvania.

Annual Address.

BY L. ASHLEY FAUGHT, D.D.S., PRESIDENT PENNSYLVANIA STATE
DENTAL SOCIETY.

MR. PRESIDENT OF THE NEW JERSEY STATE DENTAL SOCIETY, AND MEMBERS OF THE PENNSYLVANIA AND NEW JERSEY STATE DENTAL SOCIETIES :

With the lapse of another year we are assembled to hold council for the welfare of our profession, and introductory to the remarks which, as the presiding officer of the Pennsylvania State Dental Society, it is my privilege and pleasure to make at this meeting, I desire to congratulate you, my brothers in the profession, upon the pleasant auspices under which we are assembled. We have much reason to meet each other with voices of gratification and hearts of gladness. This is no ordinary occasion. The representatives of a profession from two sister States are met in solemn conclave, and Pennsylvania would greet New Jersey with warmest congratulations upon her having attained her majority. We each and all wish her the fullest realization of her chosen motto, "Esto Perpetua."

It is, however, appropriate for me to speak to you in the first place of the changes that have occurred in the professional ranks during the last year. They are not as they were a year ago—some have been mustered out, not a few enlisted. Before me are the old familiar faces of those who have been in service for many years ; but as I look here and there I miss some who were wont to be with us either in person or in spirit. We know they are no more. Perhaps at no single period in the history of dentistry has the profession lost by death so many prominent men as during the last year. Pennsylvania would here pause and recount her sons. She would place at this time some tribute to their memory.

Instinctively the name of Dr. James W. White presents itself to our minds. As the editor of the *Dental Cosmos* for a period of nine-

teen years, he has been a close and intimate friend. His high professional spirit will ever be revered. It was his intent and earnest desire to make that journal a practical exponent of the science and art of dentistry, and to supply to us all that the progress of the medical and dental professions afforded. How perfectly he succeeded in this aim, was attested by our eager watchfulness for the coming of his familiar representative to our door on the first of each succeeding month. Nobly and grandly has he done his work, and it is a lasting monument to a memory that will remain ever green.

While the life-work of Dr. W. H. Atkinson did not emanate from Pennsylvania, he was nevertheless her offspring, and she would record his work. He was a man of vast mental resources, from which he gave generously. So genial, so kind, so lovable, who is there that did not number him among his friends?

Who of us does not remember Ambler Tees? His quiet, genial way endeared him to all who knew him, and though he is no more, his influence will remain with the profession for many years. The beautiful continuous-gum work, that pride of high art, acknowledges an impress at his hands; for he improved the work, the furnace, and the instruments for making it. To his inventive skill we also owe a fine alveolar forceps, and one of the most satisfactory and practical styles of rubber-dam clamps. He achieved a reputation especially in prosthetic dentistry, and had few superiors in that branch.

The oldest of us will recall the face of a young man who entered the practice of dentistry in Philadelphia in 1834,—Dr. W. W. Fouche. He was long and prominently identified with the educational interests of the profession as Secretary of the Board of Trustees of the Pennsylvania College of Dental Surgery. And now, lastly, we would lay the laurel leaf upon the grave of Dr. Stephen R. Wing, a tribute to his memory.

One by one these have passed away, but the young men, in the prime of life and in the strength of manhood, are stepping into their places and receiving the mantles as they fall from their shoulders, to uphold the work and dignity of the profession. To this end Pennsylvania has conferred the degree of Doctor of Dental Surgery, this year, upon two hundred and fifty graduates.

It is well that recruits take the place of retiring veterans, but we cannot but pause for a moment and consider the meaning of so large an accession. Is not the number admitted to practice this year, and year after year, out of all proportion to the possibility of a thorough education? I believe enormously so. This remark is made advisedly,

and with a full recognition of the steady purpose and earnest effort on the part of all our leading schools to inculcate a broader culture, and to thoroughly equip the graduate for active practice. In speaking to a paper read before the New Jersey State Dental Society last year, I pointed out then, and still feel called upon to reindicate here, a fault which must be remedied before much progress in reform can be made, viz: the attempt on the part of the student to obtain the right to practice at the smallest outlay of money, time, and labor; and the rivalry upon the part of our institutions to claim superiority and to rank as the best, based upon the false standard of being the college graduating the largest number. Partially educated men only, can be the result of such struggles. We need fewer institutions of learning and relocation of the few with non-conflicting territory to check this unmeritorious contest; and popularity should only be accorded to that institution ranking as best because its alumni become famous and a high type of practitioner. This, and this alone, will constitute a character filled with honor, reputation, and respect, for the merited reward of true manliness will be paid to the fountain whose water is the clearest crystal. Knowledge is, indeed, power, and the new accessions to the dental ranks, being thus well freighted, will contemplate in professional life only those things which are true, honest, just, pure, lovely, and of good report.

I have stated here a fact, and that for a second time, with an interval of a year. There is every reason to believe that it is not peculiar to my own mind alone. The evidence on every hand is that I have simply voiced a belief entertained by almost every member of the profession not now directly interested in active collegiate work; and perhaps in no small degree accepted as truth, even by those engaged in professorial duties. The majority, however, will never rule, and the desired changes will never be established, until the National Association of Dental Faculties becomes imbued with a philanthropic spirit sufficient to give it form. Perhaps now that the lengthened terms—so long agitated as the one thing needful—have become operative, consideration will be given this important matter.

I heard a voice present inquire what of the incompetents now in the profession? This problem is of deep interest, and of as immediate importance as the one just discussed.

The care of these, however, as far as Pennsylvania is concerned, is the province of our Society. We have two standing committees—one on Legislative Action, and one on Enforcement of Dental Law. In my estimation the latter is at present the more important committee.

During my incumbency in the chair of President, I have given no small consideration to the duties and the expected results of the labors of these two important bodies. Judging by the correspondence received from individual members, I fear the erroneous impression exists that we are very much in need of legislative action. I am satisfied, however, that the law of Pennsylvania, although not in all points the best, is nevertheless an excellent statute, that it contains all the essentials, that its highest possibilities have never been realized, and that alterations or amendments can only wisely be made after it has been thoroughly enforced and tested. The Committee on Legislative Action in securing its passage have provided that the person engaging in practice shall have graduated and *received* a diploma from the faculty of a reputable institution where dentistry is taught; that such institution shall be a *chartered* institution; that the holder of such diploma, before engaging in practice, shall present the diploma to the State Examining Board for approval; such examining board *being satisfied* as to the qualifications of the applicant and the genuineness of the diploma, shall indorse the same as approved, after which the diploma shall be recorded in the county in which he or she intends to practice. Gentlemen, what more could be desired than is here provided? I know of but little. It is an excellent law, but Pennsylvania is behind other States of the Union in her enforcement of law, and because of this apathy the State has become a haven and a refuge to those fleeing from prosecution elsewhere. It is now requisite that those who stand high as educators in the colleges shall step to the front, and assist rather than oppose enforcement of the law. Notwithstanding the fact that the law reads "the person entering in practice shall have graduated and *received* a diploma," I have knowledge of instances where the professors of institutions have encouraged and abetted attempts to practice without the diploma; and in one instance the violator was actually furnished with a certificate by the dean of an institution, and led to believe that it would allow him to practice.

Notwithstanding the fact that the law states that the institution shall be a *chartered* institution, it is believed that it would be difficult for all the institutions now sending out graduates to produce their charters. These facts have been developed by the earnest work of one little local society, which has stood manfully to the fight of enforcing the law in one county. It has done more, too, than this. It has thoroughly tested the law, and secured out-and-out convictions under it as a whole, *i.e.*, under both the act of 1876 and the supple-

ment thereto of 1883. It has developed the fact that the clause "*being satisfied* as to the qualifications of the applicant" empowers the Examining Board to examine before indorsing. The golden opportunity is certainly now before the Committee on Enforcement of Law, and every effort should now be exerted by every member of the Pennsylvania State Dental Society, by every member of the profession in the State, and by the Committee on Enforcement of Law, to bring offenders to the bar of justice. This will require what it has cost the few,—personal contribution of time and money. The coming year should be filled with a rich fruitage, and as your presiding officer I commend it to your hearty consideration. It will require devotion in spite of adversities, the only stimulant being the knowledge that persistent action alone means progress. If it is in the metal of which we are composed, a true advance can be made, and quackery, charlatanism, and inefficiency forced to decline under the present law. Let us, therefore, one and all tamper not with, but enforce, the present Acts of the Assembly of the Commonwealth of Pennsylvania.

I now desire to refer for a few moments to dental literature. The number of dental books published during the year past is unusually large, and many of them are works of great learning and ability. Foremost among the many may be mentioned the highly interesting volume by Willoughby D. Miller, on the "Micro-organisms of the Mouth." This is the most advanced contribution to dental histology that has ever been made. It is replete with practical demonstrations, and the conclusions reached open up the new field of aseptic and anti-septic dentistry, and make possible a higher plane of service in combating the evil effects of dental caries. His investigations have modified dental usage, not only in this country, but over the entire world.

We would also acknowledge a valuable donation to "Practical Dental Metallurgy" from the gifted pen of Thomas Fletcher.

Orthodontia has received its deserved attention, and been kept prominently before the profession, by the great work of J. N. Farrar and the productions of E. S. Talbot.

Dental surgery is represented by the books of James E. Garretson, A. W. Barrett, and Henry Sewill, all showing great compass, research, and learning.

Practical dentistry fills out the list with authors of such high esteem as Catching, Haskell, and Gorgas.

The work of G. V. Black on "Descriptive Anatomy of the Human Teeth" is of great merit.

There are many other dental books, general in character, but of minor proportions, which I have not place to name, but which are meritorious and useful productions. The works and monographs on special subjects are very numerous, and many are of utmost value to the profession.

Having now spoken of those things which naturally find a place in a presidential address, I wish your attention for a short period while I say a few things relative to the Code of Dental Ethics. At times publicly, and I believe always tacitly, we recognize each other as professional brothers, but I think that, perhaps owing to the youth of dentistry, we do not yet get such a grasp of the meaning of the word brother as to fully comprehend that we are members of one great family.

The true advancement of our profession will in no slight degree depend upon the high recognition given to our family ties,—to that comprehension which each individual has of the rights and privileges of every professional brother in all the relationships of professional life. The question of the laws regulating intercourse, however, is not easily treated in general terms, and for that reason I fear is not as well understood as could be wished. That there should be something more definite on this subject than at present exists, has been for some time painfully apparent. A copy of the constitution and by-laws of the Pennsylvania State Dental Society, published in 1889, contains a copy of its Code of Dental Ethics. A comparison shows these ethics to be essentially the same as those adopted by the American Dental Association in August, 1866. Our profession has made enormous progress in twenty-five years, and we are no longer the children we were then. We have grown into the stature of manhood, and the demands upon us involve far more risk and danger. An injudicious expression regarding another practitioner, which then meant little more than possible temporary benefit to the one who made it, may now be used by a very intelligent public as a lever of great harm to his compeer. The professional bearing of dentistry, too, has become greatly established and accepted, and things which could then have been winked at, ought now to be met with a frown of discountenance from the constituted authorities of the profession. While it is possible that the looks and remarks to which I have referred are at times made maliciously, it is far from my purpose to intimate that such is their nature in even a majority of the instances in which they occur. Indeed, I believe that by far the most frequent cause is a careless habit of speech. It therefore seems to me a very fitting and oppor-

tune time if, in the very near future, the Dental Code of Ethics be remodeled, and made full and more specific upon many points, so that they shall remain at all times prominently in the minds of all members of the profession, that the benefit of their restraining and constraining influences may ever be operative.

I am well aware that this suggestion may not meet with popular reception, in that there are many very worthy men who believe in the puerility and narrowness of codes of ethics as formularies, and in the great superiority of "unwritten law"; but it must be admitted that men have not yet reached the angelic state, and that even the word "gentleman" has not a universally accepted meaning. With human nature constituted as it is, I cannot believe that codes of ethics are unnecessary or illiberal. The abolishment of them to gain a larger liberty of conscience would be rather to establish a liberty which, without law, is license. To tacitly ignore them is to place the profession in the same helpless condition that the body would be if one could abrogate the special senses and allow the good of the economy to depend upon the general senses. This, however, is not the place for me to map out or suggest the changes and additions, but it is to be hoped that the local societies, whose delegations so largely constitute the State Society, will consider this subject during the year, and send up their delegations to the next annual meeting carefully instructed for legislative action.

The topic just touched upon relates to the dignity, bearing, and welfare of the profession internally—that is, among ourselves. Apropos to it is a subject of kindred signification, which I feel called upon to deal with in this connection, viz: the dignity, bearing, and welfare of the profession externally,—that is, with the public. We are too willing to-day to rest in the possession of a title which was won only by the spirited aggression of our professional predecessors, and to stifle our consciences with the vain and childish flattery that this title in itself fools and dazzles the public into a belief in our respectability as members of a learned profession; or perhaps we believe such independent position conceded to us, because by legislative action we have forced the matter upon the public in nearly all the States of the Union. It is, however, clear to every observing mind that our independence, about which we have heard so much during the last year, is far from being an established fact. To place dentistry as an independent profession in the hearts and minds of the general public, is a desire worthy of our consecrated effort. There is truth in the suggested thought of Dr. G. S. Dean, of San Francisco, when he

quoted, "The people do enact," and dental independence is to be secured not only by protective legislation, by enforcement of dental law, by a specific code of ethics, but also by public education. When the public is taught those things about dentistry of which they are now grossly ignorant, the great public interest will be represented in the demand for protection, and the independent professional aspect will become an established fact. This public education requires the personal consecration of each individual member of the profession. To teach he must comprehend clearly his own position. There is an illusory and unattainable independence which is a mere dream, a fiction; but there is also a reasonable and attainable independence not inconsistent with our obligations to our kindred professions.

The danger of our age and of the future is, that a reasonable and possible independence should be made needlessly difficult to attain and preserve. Our professional cards, our printed matter, our window-sills, and our door-plates, ought to bear no doubtful story,—D.D.S. is our legitimate title. The boards of trustees of dental colleges should be representative,—composed of a majority of dentists; and even the professorial lists would bear purging with benefit to their dental appearance. It is worthy of record here, and to the honor of the profession, that its two representative journals, and particularly the older one, are in the hands of editors who are practical dentists, and who proclaim that fact in unmitigated independence boldly upon the title covers of their respective journals. Care, too, should be exercised by the writers of our literature to preserve and proclaim independence. Indeed, it is for us, one and all, to ever remember that we are to be known not so much by our statements as by the lives we live. It should be our concern and care that we express no false position, but that we manifest always dentistry only. Strive ever to advance the interests of the profession in literature and in work, for though every educated man in the profession is dependent upon others, and indebted for a continual stimulus and many a suggestion to the writings of his predecessors in medicine and dentistry, he may preserve sufficient mental independence to be able ever to heighten what he is, and not to efface his chosen profession. It is true, however, that in an age in which so much is investigated and made plain, the labors of others are so thorough that a check is put upon independent investigation. The only talent which is required is to take the opinions, ideas, and arrangements of other brains and use them, and so glide through life with a minimum of personal exertion. Such a state of feeling is destructive of all originality and independence.

Let us each individually see to it that we have other purpose in professional life than to live in comfort with as little exertion as possible, and let us do noble work by our own personal effort, and plot and contrive that our profession shall be benefited by our industry. Put upon record every real experience, for a paragraph of such writing is worth pages of speculation. Let each in his place become a steady worker, occupied, if possible, with a task that is difficult and arduous, but that we know to be within our powers, as something to be done for the uplifting of the independence of our profession, and then do it, for as each day passes so passes life itself, that succession of many days, and when it is gone our imprint shall be found upon the landmarks of dentistry, giving it an independent caste by the independence of our professional labors.

There is much else in my mind to say to you upon this occasion, but I must now give place to my friend, the President of the New Jersey State Dental Society, who is, I am sure, fully freighted. I thank you, one and all, for the honor you have conferred upon me, and desire to express to you my appreciation of the hearty co-operation and aid you have so liberally given during the year to make this meeting a success.

Annual Address.

BY GEO. EMERY ADAMS, D.D.S., PRESIDENT NEW JERSEY STATE
DENTAL SOCIETY.

GENTLEMEN : We are met on the twenty-first anniversary of the New Jersey State Dental Society, and, as I look around on this assemblage, among whom are some of the most prominent men in our profession, it is difficult to overcome the sense of embarrassment, mingled with feelings of pride, that I have been chosen to preside over the deliberations of your Society at this session. It is a matter for our congratulation that so many of our members are present at the first day's session, and it is hoped all will be able to remain until adjournment. With each succeeding year our meetings have been more interesting, and the attendance larger, and the friends from our sister State who meet with us this year have increased the numbers beyond our anticipation. To the Pennsylvania Society we extend our hand, and hope that it may be our good fortune to meet in joint session many times.

To you our guests we bid a hearty welcome, and trust you will avail yourselves of the privilege of the floor in our discussions, as experience has taught us that some of the most valuable thoughts, which proved of great benefit to us in our practice, have been disseminated by you.

While the hand of death has been at work in our midst, I am thankful to state that of our active members, we have lost none during the year.

Of those who have met with us from year to year, one whom we all revered, and for whom our admiration was unbounded, has been called home. We miss him from our midst, and his place cannot be filled. He had a kindly word for every one, and the student or practitioner who went to him for advice was never turned

away, was treated most courteously, and given such advice as is born of ripe experience. I am gratified that a committee has already been appointed to draft suitable resolutions upon the death of our beloved friend and honorary member, Dr. William H. Atkinson.

Of our friend Dr. J. W. White, who but recently died so suddenly, I cannot do better than to quote from two of the journals of the current month. "Appreciation of his rare intellectual gifts was forgotten in admiration of his sincere, sweet-tempered, loving nature. He was singularly modest, retiring, and unassuming; genial and kindly in spirit and manner,—the friend of all, the enemy of none; a walking encyclopedia of information, as approachable as a child, ready at all times and with evident pleasure to give the benefit of his knowledge to all who sought it. His death will be mourned wherever science is valued throughout the earth; but Philadelphians especially will miss his kindly face, his ready hand, his cordial greeting, and his noble example of industry, integrity, and manly character." "While in no sense a practical dentist, so intimate were the relations between the profession and himself that few realized the fact, and he was ever a welcome visitor at the various conventions he was in the habit of attending." United action has already been taken by this Society.

One other face we shall miss at our gatherings, that of Mr. Jay Lee Smith, of South Orange, who gave his time to this Society because of his love of science, and assisted Professor Sudduth with the lantern views several years at Asbury Park. His virtues were many, he was esteemed by all who knew him, and though a layman he was an earnest student of histology.

Of the fourteen members at the organization of this Society, four are dead, and only two are active members to-day; and from this small beginning our present membership is, in proportion to population, one of the largest in the country.

It has been said truthfully that ours is a mutual admiration Society, and why should it not be so? We live at peace and in harmony with our members, and Jersey is always willing to, and does, come to the front in initiating any new movement for the welfare of our profession. In substantiation of this, let me mention as among the questions of the past two years that emanated from our little State the following:

The call for an International Dental Congress at the World's Fair was made by this Society. After several conferences, a meeting was held at the Hoffman House, New York, April 8, 1890, at which most of the leading Societies of the East were represented. After considerable discussion, it was decided that the matter be referred to the

American Dental Association and also the Southern Association at their next meetings. At the Southern meeting the matter was brought up, but the New Jersey State Dental Society did not receive any of the credit for its inception, so far as I have seen in the dental journals or heard from members representing this Society at those conventions.

Later a movement was started for the abolition of dental patents for all operations upon and in the human mouth. This has caused quite a discussion, but the opposition is largely in the majority, and we look for the granting of our petition in the near future. Twenty-two Societies throughout the country have already joined with us in this movement, and a meeting has been called for the first week in August at Saratoga.

The Atkinson memorial was born in Jersey,—not in the State Society, but in a smaller one composed largely of members of the former. I am pleased to state that a committee has been appointed by this Society, to co-operate with the committees of other Societies.

These subjects, gentlemen, are only mentioned that you may know that while we meet but once a year, we are not idle the rest of the time, but are striving for the good of our profession.

As regards the new dental law, reports show that it is working admirably, and nearly all those who are legally entitled to practice are now registered. There are a number, no doubt, who are practicing illegally, for a knowledge of and for evidence against whom the Board must rely upon the reputable practitioners throughout the State. Only one case before the courts was appealed; this, however, was settled by compromise, defendant paying costs and complying with the requirements of the law, after the decision of the judge as to its constitutionality.

I cannot but think it is the duty of every dentist in practice to call the attention of the Board of Examination and Registration in Dentistry to every new practitioner who enters the State. I understand that the Legislative Committee will ask of the next Legislature that our law be so amended as to prohibit laymen from extracting teeth for fee or reward. This is highly commendable, and I hope it will have the assistance of the members of the profession, as there are numerous instances where unpardonable injury has been done by the promiscuous extraction of teeth.

I would like to impress upon you the importance of increasing our membership, and urge you to use all your influence in that direction. All dentists in practice should become members of the State Societies,

as many new ideas are promulgated, and interesting clinics performed which are not to be witnessed elsewhere.

I thank you, gentlemen, for your kind attention. I know that this will be, of all meetings, our most interesting. With our brothers from the Keystone State to help us, we cannot fail to derive great benefit and pleasure.

DISCUSSION.

Dr. Watkins. There is one point I wish to touch upon, and that is in reference to the clause where it speaks of the abolition of patents upon operations in the mouth. As most of you know, there has been an effort made during the past winter to inaugurate a movement which will become national in regard to procuring the passage of a law by Congress for the purpose of preventing the further issuing of patents upon operations in the mouth. There have been committees appointed by different Societies all over these United States. The dentists, as a rule throughout the country, have taken a great interest in this matter, as it affects each man individually; it is not a matter which simply affects the Society, but it affects the dentists of America as a body. No man wishes to be placed in such a position that he will feel hampered in performing the ordinary operations which he is called upon from day to day in his office, and with the existence of the present patents we are all infringing upon patents continually. The idea is to prevent a further issuing of such patents. Committees have been appointed by the different Societies, and there has been a call issued for a meeting of those different committees, which will take place at Saratoga, at the Town Hall, on Monday evening previous to the meeting of the American Dental Association. If there are any here who belong to those committees, I would like them to remember that date.

Dr. Osmun. You noticed that there was a similarity in the line of thought expressed by both the presiding officers. The burden of their remarks seemed to be the line of dental legislation; an important question in these days. Dr. Faught's address is along the line of the enforcement of law. It is a truism almost to say that a law non-enforced is worse than no law at all, because it brings into contempt the object for which the effort has been made to obtain it. Our own President called attention to the effects of the dental legislation that has taken place in New Jersey. Jersey men feel that we are pioneers in this direction, and take pride in the work performed. The law in regard to the indiscriminate extraction of teeth is a very

important one. Whenever there is an incompetent man violating the law in any State, it is simply offering a prize upon some one else attempting the same thing. The point taken by the President of the Pennsylvania Society, that it is a bounden duty, one of the highest duties, of every practitioner in the State to see that the law is not violated in his immediate neighborhood, is admirable.

This law of ours has been criticised. It has been claimed that when once a diploma has been granted a person by a college, that, in so far as that particular person was concerned, he should not be examined. Colleges should graduate men that are competent. Boards of health are now the established things in all cities. There is no city of any size but that has its board of health. That board of health has the right, and it is the privilege and the protection of the citizen as well, that a board of health should entertain all protests in reference to the violation of sanitary laws. And I take it that a State has the right to have its board of health and a profession has a right to have its professional board of health to aid somewhat in its duties, and to protect itself from the invasion of incompetent men.

That the New Jersey Society was endeavoring to be among the foremost in works, and in inaugurating new schemes for the elevation of the dental profession, I think was well taken. There is now the question of the education of the public that was touched upon by the President of the Pennsylvania Society in his address. I think it is one that should lie near the hearts of every practitioner of dentistry. It goes without saying that the more enlightened the patient, the better he is, the more appreciative, and the better results can be obtained. And in our Society the question is now being agitated and will soon be in practical shape.

A President's address covers a wide field. We are to be congratulated that we have two such addresses, and if we will take the suggestions home with us, think them over, and act upon them, I am sure that both Societies and both States will receive great benefit.

A Case of Acromegaly.

BY H. NEWTON YOUNG, D.D.S., WILKES-BARRE, PA.

MR. PRESIDENT AND GENTLEMEN :

I have brought with me a case, to present it as an anomaly which is considered rare. You will see by the cast that the articulation is somewhat out of the normal run. I can explain it by reading a portion of the case as presented by Dr. Long, of Wilkes-Barre, before the State Medical Society of Pennsylvania.

Matthias M., German, age forty-eight, laborer. His father was a strong, healthy man, who never showed signs of any special enlargement, and died at the age of sixty-five after two days' illness. Patient can give no information about his mother, who died when he was an infant. He has two brothers and three sisters living, and all healthy ; at least they have never presented any abnormality of growth. The patient's growth was normal, nor did he ever suffer from any sickness during his boyhood. At the age of twenty-two years he entered the German army as a cavalryman, and served three years, until he was twenty-five years old. At the time he must have been healthy, or he would not have been accepted as a soldier. During his service he suffered for five weeks with an abscess on the left hip, but fully recovered. In 1870 he emigrated to America, and after his arrival he was married, and lived with his wife for fourteen years. The result of the marriage was three children, two of whom died in infancy ; the third is a healthy boy, seventeen years old. About twelve years ago he had a serious abscess on the right hip, from which he fully recovered. He is sure that he has never had any other sickness, and is free from specific taint. During last summer he suffered for several weeks from headache, but never before or since. He has always been more or less constipated. Symptoms of enlargement in his hands were first observed by the patient's wife in 1874, when he was

thirty-one years old, and since that period the hypertrophy has been gradually but constantly increasing. The patient is five feet nine and a half inches in height, and weighs two hundred and sixty-two and a half pounds.

The cranium is normal in size and shape, and covered with a thick, well-preserved crop of gray hair. The forehead recedes from very prominent eyebrows. Neither the eyelids nor the ears are enlarged. The nose is large and broad. The upper lip is not at all enlarged, but the lower lip is very prominent and everted. The cheek-bones are prominent, caused probably by the dilatation of the maxillary sinus. The lower jaw is enormously hypertrophied and massive, the chin projecting forward and causing a decided prognathism. The patient has the average intelligence for one in his station of life. His appetite for food and drink is not excessive.

Dr. Young then gave measurements of different proportions of the body of the patient, and continued :

There have been so few cases of acromegaly reported that it would be difficult to describe all the typical symptoms, no two cases being exactly alike. The elliptical-shaped face and the hypertrophy of the hands and feet have been present in every case. The etiology of the disease is unknown. Several of the patients have been syphilitics, but whether this has any effect upon the causation of acromegaly is doubtful. There has never been any proof of heredity. Acromegaly occurs with about the same frequency in both sexes. It first appears between the ages of twenty and thirty years ; it is very slow in its progress, lasting twenty or thirty years or more.

I would say that his tongue, as near as I could approximate it, was probably as large as my hand ; I could not obtain an impression of that. I would like to pass this impression around [exhibiting plaster cast]. I have here a profile view of the man, the exact size as to measurement of the face, as well as one of his hands [exhibiting same]. He is totally blind, and there is a difference of opinion as to whether that is due to the progress of the disease or other causes. At the time of the second abscess he was treated by a physician and told to go to bed. This was in the evening, and in the morning his son came to the room to know if he was not going to get up ; he said, " No, not until it is light." In the evening, shortly after he had taken his medicine, he had an impression as though some one had struck him in the forehead in a heavy manner. His son told him it was ten o'clock ; he said it was not possible, as it was not light yet. That is the first he knew of his blindness, and it seemed to be instantaneous

and complete. His feet are correspondingly large with his hands. The soft tissues have increased correspondingly. His mouth is very easy of manipulation, as you might imagine when I say that I could put my two hands in and press around the impression compound, and hold it there until it hardened. You will notice there are indications of three or four roots. He told me two had been giving him trouble during that week, which he had taken out with his penknife. There is some enlargement in the upper jaw, but very little in the soft tissues.

DISCUSSION.

Dr. Head. I would like to inquire if there could not be some remedy suggested for cases where the disease is less extensive, or if there is any known remedy.

Dr. Young. I have not given the idea of correcting any irregularity of that kind a thought. I took it merely as a curiosity, but I would like to know if there is anyone here with knowledge of any case like it. The report says there have been only about six cases upon record known. The peculiarity, it seems, is not that it was a formation at birth, but a growth after birth.

Dr. Beck. I would like to report in a few words a case in an opposite direction to this. It is the only case I ever saw. A gentleman that was seventy-three years of age, and had thirty-two sound teeth in good preservation; had never visited a dentist in all his lifetime but once, and that was to have a lower inferior molar removed. But along the lower jaw he had bony deposits, something like the fungous growth we see upon diseased oak-trees; all along the lower jaw were these deposits of these bony nodules shown in a very good state of preservation. I have a cast of the mouth at home. It was interesting in the fact that the gentleman was seventy-two years old and had never visited a dentist but once.

Dr. Peirce. I know of no case in the history of my practice that at all corresponds. Cases occasionally occur where we have a prominence of the upper lip from enlargements of the process; but those do not correspond at all, nor are they of the same nature.

Dr. Beck. I saw a man once who had such free motion of the lower jaw, and the lower jaw was thrown out so far that he could take hold of his lower lip and place it across the bridge of his nose.

Dr. Jack. The case has one point of importance, and that is as it bears upon the possibility of interstitial growth of the lower maxilla.

Dr. Stockton. Do you know how long this growth has been taking place?

Dr. Young. About twenty years. My understanding of the case was that it was considered now not to be increasing.

Dr. Beck. I would like to ask Dr. Jack if he considers this a case of interstitial growth?

Dr. Jack. I should consider it as presenting evidence of interstitial growth.

Dr. Stockton. There is very little discussion about this question, and the question was raised a little while ago about the remedy in such a case as that. The case that Dr. Beck spoke of, the chin meeting the nose, reminds me at present of a man who was nineteen years of age when presented to me. His lower teeth were very prominent, and closed so far up in occlusion as to entirely hide from view his upper teeth. My treatment was simply the capping of the lower teeth, putting gold caps on all of them, and opening the mouth about half an inch. That was two years ago. I saw the gentleman a month ago, and on opening his mouth he exhibited a presentable appearance.

Incidents of Office Practice.

DR. OSMUN. The case presented by Dr. Stockton opens quite a field for the application of gold crowns for cases of regulating.

Very often we have the reverse of the case mentioned, where the lower teeth strike on the inside of the upper, forcing them out. Years ago we used to grind off the lower teeth to relieve that difficulty. But of later years we have placed upon the lower molars a gold cap, putting them one or two on the side of the mouth, to restore the occlusion. The elongation of the other teeth would bring about a perfect occlusion, when the crowns on the other teeth might be removed if thought best. The teeth have become elongated, and you have restored a bite.

Dr. Watkins. I will relate a case of pyorrhea. A lady applied to me. She had been having the first superior molar treated several years for pyorrhea. The palatine root was especially affected, so that the connective tissue had been destroyed almost to the apex. My treatment was simply to take a fissure bur and cut off the palatine root entirely, cauterize with carbolic acid, and cap with oxyphosphate. The two buccal roots were in a good, healthy condition at that time, and almost immediately upon the removal of the palatine root she exclaimed that she had not felt that comfort in years which she felt immediately upon its removal.

Dr. Head. How do you keep the patient while you cut the pulp off?

Dr. Watkins. It didn't hurt at all. The pulp would be more or less inflamed from the condition of the tooth; there was, however, no special pain in cutting that off. But after it was cut off, the air coming in contact with it caused pain.

Dr. Osmun. I had a case of five years' standing. I wished to remove the tooth and expected to do so, but the patient said, "I wish that inside root was out, and I would be better." I excised the root, and the tooth is in good condition at the present time. In performing

that operation I use a disk for cutting the root, and then take a pair of incising forceps and cut the root off. I have had three cases of that kind which have been entirely successful. They afford immediate relief.

Dr. Stockton. I will relate an interesting incident. I have a patient who has been troubled somewhat with pulmonary complaint, living in Colorado. He was at his home in Newark last fall, and came to have his teeth looked over to see that they were all right before his return. I said to him, "I think it best that the wisdom-tooth on the right side be extracted." There was inflammation around it, and it more or less discharged pus. He said, "Very well." He came in Saturday morning and I attempted to extract this wisdom-tooth, and found difficulty in doing so. He was not very strong, and I said to him, "I wish you would get on the cars and go over to New York and take gas and have this tooth out." It happened that the extractor at this place was away, and his son was in charge. He gave the patient gas and attempted to remove the tooth, and, as the patient expressed to me afterward, he woke up with the feeling that would pass over him in seeing a dog shaking a rat. That is the expression he used, so vigorous was the pulling of this tooth. But the young man failed to remove it. I did not see the patient until the middle of the following week. Then he was unable to open his jaw at all. The occlusion was such that the upper teeth overlapped the other ones very much, almost excluding them from view. There was no way, then, of removing this tooth. I said, "You will have to wait," and advised what he should do in regard to the treatment to get his jaws open. This was, I think, in the last of September; I did not see him again until after Thanksgiving-Day; his mother came in and said, "Something must be done for Charlie." I said, "What is the matter?" She said, "That tooth isn't out yet; a physician says the jaw is fractured, and the family physician says there must be no more pulling, as he is not able to bear it." I said, "Who has charge of this case?" She said, "You." I said, "I have had nothing to do with it." He came in a few days later, and I put the lancet in and relieved it of a little pus that was there. It kept on ulcerating, and three or four weeks after I succeeded in removing the tooth, supposing that would remedy the difficulty; but the disease still continued. It had evidently formed a sinus in and around the second molar, and I had to lance it on the outside. The case is very much better, but is not well yet. The man has gone to Colorado; his health has improved. The pulmonary disease he has been suffering under helped very much to accel-

erate the disease. He has gone back there and is better, but the disease is not entirely removed yet. This is a case of interest to us all. That man was laid up for nearly four months. Whose fault was it? If the tooth had been removed, there would have been no trouble; and there is one of those cases that comes in where somebody will say, "Why did not you remove it yourself? It was a sign of ignorance on your part that you did not take it out." I thought the young man would be relieved by taking gas and going to somebody who made a specialty of removing difficult teeth. I have had a great deal of anxiety over the case; I hoped it would get well, but I had doubts about it, and he has thought and I have thought some time that he would have to have the jaw laid open and the bone scraped.

Dr. Osmun.¹ Did you find that jaw fractured at all?

Dr. Stockton. No, no fracture at all.

Pulpicide, the Best Assurance of Permanent Safety and Usefulness.

By C. A. MARVIN, D.D.S., BROOKLYN, N. Y.

THE treatment of exposed pulps is an old subject, about which so much has been said and written that it would seem nothing remains to be added. And yet the question arises, Has it been settled satisfactorily? If so, then truly the subject may be relegated to the ranks of finished topics, whose further consideration is useless and tiresome, whose reappearance is offensively obtrusive. If it has not been satisfactorily settled, if doubt still hangs over it, if opinions differ regarding it, if the treatment employed varies widely, then it is properly a subject for further consideration, upon which any new light possessed by any practitioner should be thrown, to the end that we may advance toward a final and satisfactory solution of the difficulty, if difficulty there be; toward the unanimity of conclusion which we desire to reach, and which shall result in a uniform and sensible system of practice.

We all start from one point, with one mind as to the truth that meets us at that starting-point, *that life is a valuable possession, to be guarded and prolonged by the employment of our best ability.* I take it we shall not differ as to this general statement, whether it be conscious life with intelligence, sentiency, as characteristics, or mere existence,—whether muscular life or neural life. So much for the bald statement. It gives us common ground where we can stand agreed. *Life is valuable. Life is better than death.*

Now to advance a step. What do we understand by this word “life,” and what makes it valuable? I answer: clearly to perform the functions assigned to it, and to do this uniformly, naturally, without friction, without discomfort. Such a condition makes life—any life—

valuable. A mind that is unbalanced, weakened, and cannot think intelligently, is not a valuable possession ; nerves that are so excitable or out of tune that misery is the result of their operation, are worse than none ; muscles so rigid or powerless as to furnish little or no ease of motion or degree of energy or control of action, might as well be dissected out and laid away in brine, for all the worth they are to their luckless owner. The value of each of these is the ability to perform the functions expected of it, and the steady exercise of that ability.

This is a universally accepted truth. Let a finger or toe, an arm or leg, become diseased and useless, a source of distress and a menace of future ill, and the decision is quickly reached,—amputate it. We are certainly justified in applying the same principle to the dental organs. A living tooth is better than a dead one for several reasons : it is stronger, better able to resist mechanical injury, better able to endure changes in temperature, less liable to decay caused by the action of acids in the mouth, less subject to the many diseases which affect the roots of teeth, and the periosteum ; is more useful in being endowed with the keen sensibility that perceives the first touch of occlusion and measures the force of pressure.

If the tooth becomes sick, either from decay or fracture, and the pulp is exposed, or influenced without actual exposure, pain supervenes, usefulness is lost, and discomfort substituted. This state of things must be corrected. Pain must be expelled, and comfort and usefulness restored. How shall this desirable end be achieved ? That is our question. We make our diagnosis after careful examination. If we find a simple exposure and conclude that the pain is caused by draughts of air, or suction, or contact of foreign substances, or the friction of mastication, and *that there is no organic disease*, our course of action seems plain, viz : to protect the exposed pulp with a suitable covering and fill the cavity. Scores of cases are so treated, and with success. But if the pulp is not quite healthy, if it has received injury from sudden and severe pressure, or from long exposure, or from contact with some powerful agent used to “cure” toothache, then the operation of covering and filling is not at all certain of being successful. On the other hand, it is quite certain to be followed by aggravated pain, positive disease, and misery untold. It will be seen that this uncertainty of result all hangs on one thing, viz : the decision of the question—Is the pulp healthy ? If so, it will remain quiet under its filling, when that filling is properly introduced. If it is not healthy, it will rebel, and trouble will ensue.

Now I contend that it is a very difficult matter to decide as to the health of the pulp, and still more difficult to determine as to the degree of unhealth up to which conservative treatment may be hopefully employed, and beyond which such treatment is likely to fail. The ordinary tests are by no means infallible, and such as are delicate enough to be employed in determining the condition of so exceedingly delicate a structure as a dental pulp have not yet been discovered, or at least revealed, so that we are much in the dark in respect to this essential point, and seriously at a loss how to settle it. Our *materia medica*, our agents, are too gross in character to restore a sick pulp to health. A mustard plaster may be applied to a rheumatic back with propriety, but hardly to an eyeball inflamed and painful. Fitting applications may be made to diseased muscular tissue, in order to coax it back to health, but as yet we are without agents that are fitted to the very highly organized—almost spiritual—tissue of a dental pulp. Our efforts are well meant, but our materials are too harsh. We may benumb, but not restore. Afterward, when the benumbed condition passes away, health not being restored, irritation follows; inflammation, congestion, and at last ulceration or an abscess, till the patient fervently wishes the dentist with his science and his "treatment" at the bottom of the Red Sea.

Now in this uncertainty, what is more gratifying than to know of a course of treatment likely to be followed by none of the evils specified? and what is wiser than to adopt it? Throw sentiment aside, lay extreme science on the shelf, and do that which will insure to the patient freedom from suffering as well as usefulness of the organ. Devitalize the pulp, remove it thoroughly from the roots, disinfect and fill with a non-conducting material, then finish the operation by inserting a perfectly packed gold filling, and the end is achieved.

Now, if this be so, why not always do it? Why not thus not only prevent pain and remove uncertainty in the operation, but also take away the ground of criticism from some members of our profession, who are too ready to seize upon some unsuccessful case upon which another practitioner has expended much effort and thought, but without the hoped-for result, and hold that case up in a paper or on the page of a magazine as a proof of incompetency or unfaithfulness? Such a search for unsuccessful cases and such a parade of them as "horrible examples" is unprofessional and unkind. He who does it may think he exalts himself and secures the name of "severe critic," "thorough operator," "impartial censor," "competent judge," but it is a mistake. The man thus pilloried may, and probably does, far

outweigh his would-be critic in knowledge and scientific attainment : may be and doubtless is striving to do that for his patient which he knows would be better—so much better as to justify effort not entirely certain in result, in the desire to attain it. He has put more thought, more delicate manipulation, more really scientific treatment into the case which the other denounces than that other possesses or can appreciate. Would it not be better, then, to spare one's self such treatment, such detraction, by at once resorting to pulpicide and making an end of it at once? Viewed in a common-sense, practical light, in a selfish light, by all means. And as long as difficulties exist in the way of our system of practice which are uncertain of removal, and as long as men are found who are ready to ridicule and decry efforts made to remove those obstacles,—but which are unsuccessful,—the best course for the practitioner's reputation is, as has been said, throw aside science and resort to the old method. But it may be asked, What becomes of the advance which all true professional men desire to see made, if no one is ready to strike out into new ground, or attempt to overcome difficulties hitherto deemed insurmountable? In answer, it may be said, there will always be some men earnest enough in the search for truth, bold enough to defy criticism, patient enough in pursuing the difficult path, to insure in time valuable advancement. And it may be said also that there are many true-hearted men ready to encourage and aid such efforts, and rejoice in their success, if success shall follow. Still we are brought face to face with the question, Is it right to subject our patients to pain and possible loss of an organ by pursuing a course in the interests of science, when another course, not so scientific, would probably spare them that pain and make that organ useful? And weighing both sides, and in the light of present attainment, with the imperfect means at hand, the conclusion reluctantly advanced would seem to be justified,—devitalize and extirpate. I say reluctantly advanced, for personally I resort to this course only when driven to it, preferring to meet frequent failures rather than abandon all effort to discover a path through the thicket. I make this statement boldly. I am trying constantly to preserve the pulp-life of decayed teeth, with variable success, while at the same time I do not hesitate to affirm what is stated in the title of this paper,—“Pulpicide the Best Assurance of Safety and Usefulness.” That is, I affirm that to-day, with present knowledge and present means. Next year I may not affirm that, for some earnest, faithful soul, ignoring the charge of unthoroughness, may still seek the light and may find it, may discover tests to deter-

mine the exact condition of sick dental pulps ; may bring to notice agents whose employment shall be able to restore to health such sick pulps, and so introduce a new era of usefulness into dentistry, the era of strictly conservative dental practice.

I shall then, if alive, shout my welcome of the valuable discovery, drop instantly my even partial advocacy of pulpicide, and place my tribute of gratitude and commendation upon the brow of him who shall have provided a way out of the quagmire of uncertainty, and made dental science famous.

DISCUSSION.

W. H. Trueman, D.D.S., Philadelphia. In the absence of the notes I prepared in reference to this discussion, I feel embarrassed. I am disposed to criticise the use of the word "pulpicide." It may be philologically correct, but I question if it explains the idea more clearly than the terms we have been accustomed to use. Our nomenclature is already burdened with terms that may very well be omitted. The doctor truly remarks in his paper that it is a subject which has been very frequently discussed, and at the present time following the old lines of discussion would probably be time wasted and unprofitable. He has, however, started out on a somewhat new line. He has carefully avoided all those new methods of treatment, and has very clearly and pointedly placed before us a question which is interesting to us all. He appreciates very highly the value of life, so long as that life performs its proper function and is a source of comfort. When it ceases to be so it ceases to be valuable, and then death is preferable to life, as the doctor very well and tersely puts it. This will apply to all forms of life. He has divided pulps calling for treatment into three classes,—first, those which have suffered but little impairment from exposure, and these he properly suggests are candidates for conservative treatment, and treatment in such cases is attended with success. The second class are those which have suffered considerable injury from exposure,—pulpes not only sick, but sick unto death,—where we have no possible chance of preserving the vitality ; and these he considers, and so do we all, fit subjects for devitalization. But between these two classes is a very large class upon which rests the shadow of doubt. We recognize the pulp is sick, but how sick? We cannot tell. We recognize there is a departure from vitality, but whether that departure is so great as to seriously interfere with recuperative powers is a subject of doubt.

How shall we treat those cases? We may attempt conservative treatment, with a very fair prospect that at some very inconvenient time we may find that it has failed, and, where it does fail, we have as a rule the tooth in a worse condition than it would have been had it been devitalized at once. We may devitalize and still run a risk, for we can never be sure of the correct deportment of devitalized teeth. We say that in later times the introduction of new methods of treatment, antiseptic and so on, has enabled us to do better work in this line than in the past. I question very seriously indeed whether we can accomplish any more in the treatment of seriously devitalized teeth than has been accomplished heretofore. Various means have been suggested to ascertain the condition of a pulp whose vitality is somewhat impaired. You may remember the introduction a few years ago of the small electric lamp, and, looking at it in the mouth, it seemed to beautifully illuminate the gums, and seemed at first glance a very valuable acquisition; but when, under the direction of the inventor, I examined a mouth in which there was a crown tooth, with the dowel extending almost to the end, and I was utterly unable to distinguish, looking through the gum, which root was filled with that dowel, I lost considerable faith in its practicability. A professional friend of mine used to give a very good illustration of the embarrassment we labor under in these cases. He suggested that we are very much in the same position as a physician would be who called upon a patient hooped up in a barrel, and attempting to examine him through the bung-hole. I think we are certainly in very much the same position. If we attempt a close examination, the very means we employ makes the death of that pulp an absolute certainty. I know that a few years ago a number of dentists contended that the pulp was not a particularly delicate organ, that it was amenable to treatment just the same as any other organ of the body, and then went so far as to say that in cases where disorganization had progressed to some extent they were able to amputate the disorganized parts and still retain the vitality of the remainder. The fact that of late years the doctrine has ceased to be declared I think very good evidence that their faith was not well founded.

Now, the question before us, and I think the main question in Dr. Marvin's essay, is, How are we to diagnose the exact condition of these cases? Have any of us any means known to ourselves, not generally known, by which we can ascertain whether the pulp exposed, or partially exposed, or affected by the approach of decay, is so far impaired that we have no hope of saving it, or so little impaired that

we may have hope of saving it? For my own part I must confess I know of no means, and for some years I have adopted the plan which Dr. Marvin suggests, and yet he says he has not the courage to always carry it out,—that wherever there is a shadow of doubt, I feel I do the best for the patient to devitalize. In illustration of this difficulty of ascertaining the condition of the pulp, we all recognize that between full normal vitality and absolute devitalization there is a very wide space. At first glance it would seem to reflect upon any dentist's skill who was not able to tell a vital from a devitalized tooth, and yet I not infrequently meet in practice just such cases. In my own mouth one of my superior incisors was for a number of years in that doubtful condition. It was examined repeatedly by thoroughly competent men, and they came to the universal verdict, "I don't know." There were some evidences that it was devitalized. The teeth on each side were devitalized. There was some evidence that it still retained vitality. Some twelve or thirteen years after it first attracted my attention it was taken to Dr. Webb, and found to be devitalized. The pulp had become mummified, but for a dozen years or more it was a matter of doubt. I found no one to tell whether it was vital or not. Now, that is an exceptional case, but we have a great many in which we recognize that there is a departure from vitality, but we cannot tell how far that departure may be, nor can we tell with accuracy the recuperative powers of the pulp. It seems to me that is the main question before us, if we can devise some way by which we can more accurately determine than at present. The question is well worthy of discussion.

C. S. Stockton, D.D.S., Newark, N. J. There are many sides to every question, and the pulpicide of pulp is a new term; and like Dr. Trueman, whether I exactly approve of it or not, I cannot say. It is not yet sufficiently familiar to my ears, yet it expresses the idea. The doctor has brought out very fully the question of life. Of course life is the great question which interests us all. Dr. Atkinson claimed that even a part of the pulp of a tooth might be preserved and be useful. I think we have gone far beyond that to-day, and the practice is not to amputate a part and attempt to preserve it. Of course, in all cases there are enough exceptions to make the rule true. I recollect a case that presented itself many years ago, that had been treated by a gentleman well known in the profession, where a portion of the pulp in one of the buccal roots remained alive after the other had been destroyed for some ten or eleven years. That is the exception that proves the rule. My impressions are regarding a pulp

which has once been inflamed, which has once ached, which has even been exposed accidentally in the excavation, that the best possible place for it is dangling at the end of a nerve-broach. I believe that it should be destroyed ; that pulpicide should take place. You may treat them, you may stop the throbbing pains and aches and pulsations that are going on there, and think you have restored that pulp to its normal condition. It may go on for months, perhaps for years, but it will come back to you sooner or later, and you find that it has committed pulpicide itself or that what remains of it requires it to be done at your hands.

My practice to-day is invariably that I destroy the pulp and fill the pulp-canal ; if it dies it may become putrescent ; the incipient stage, at all events, of a disease has begun. If you kill it and remove it, and properly fill, that trouble is avoided. So I claim now the broad ground that sooner or later when there has been any exposure of the pulp, that it will do that. It is one of the cases where death is better than life. And I think those of you who have gone through the practice of capping pulps and trusting to nature to throw out these bony walls and protect this delicate, spiritual tissue, that has been referred to by the doctor in his paper, have found that nature does not throw out this remedy.

A few days ago there came into my hands the case of a gentleman who had been very carefully treated after this manner, the patient being told that nature would throw out its resources, and that a bony wall would be thrown around this delicate structure. It is a beautiful theory, and this patient believed it until the inflammation set up began to throb and beat against those walls. He did not realize then anything beautiful about the theory. Sleepless nights made life scarcely worth the living ; he felt that he would rather be dead himself than have that living, throbbing pain there. What was the result? The pulp was partly dead already. So the question is, Was it better to try and save the life, or commit pulpicide in this case? I say again, where the pulp is once exposed, kill it.

Louis Jack, D.D.S., Philadelphia. It may be generally known that I have for many years occupied an affirmative position in reference to the propriety of the conservative treatment of the exposed dental pulp. I arise now not to combat any statements made by the essayist, but to reaffirm my confidence in carefully conducted treatment of the denuded pulp.

It may not be out of place to state that my former views coincided with those of Dr. Marvin. At length my attention became arrested

by cases of evident exposure having become protected and restored to health by the occurrence of deposits of secondary dentine. These became sufficiently frequent to indicate the capability of the pulp to take on restorative action and to resume its normal relations.

In this connection I would remind you of the two notable instances of spontaneous recuperation of the dental pulp related by Dr. Miller in the April number of the *Dental Cosmos*.

The reflection must arise in each of your minds that if the pulp in authenticated examples has been known to recover its relations and function under the circumstances of full exposure, and subject to the disturbing influences of the use of the teeth as related by Dr. Miller, there should be found means of treatment for the ordinary cases occurring in practice.

It is needless here to go over the ground which I have previously covered upon this subject, since the most of you must be familiar with the articles published in the *Dental Cosmos* and in the "American System of Dentistry." I would only now repeat the summary with which the latter article was concluded, as affording to you the key to what I have considered correct prognosis.* These are :

1. Where accidental exposures have taken place, recuperation may be regarded as entirely probable.
2. When exposures have existed without any excitement of the nervous functions of the pulp, the results of treatment carefully conducted are usually successful.
3. When, after continuance of the changed relations, the pulp has become irritated by chemical influences, and some subjective indications of disturbances have arisen, the tendency is to recovery when the conditions are attended by a state of bodily vigor.
4. When the exposures have been of long continuance and from any cause objective symptoms have ensued, the probable results of treatment become more uncertain ; nevertheless, in healthy subjects recuperation may take place.
5. When, after complete or nearly complete exposure of the pulp, it has been subjected to atmospheric influences, the results of treatment become doubtful and speculative. If the state of health be vigorous, recuperation in some cases takes place. With those of low bodily tone, failure is the probable result.
6. When chronic conditions have become established, the results are increasingly speculative, and no relief can be reached without destruction of the pulp.

* Page 168, vol. ii, "American System of Dentistry."

This summary I have found no reason to materially modify, and from my experience in the treatment of these cases I would consider it a serious disregard of the interests of the patient and a compromise of professional standing to immediately devitalize an exposed pulp which may be placed in either of the first three classifications, while in the latter three classes of cases the better course to be pursued in the majority of instances is the direct resort to devitalization.

The cases of exposure as they have occurred in my practice, which essentially is a family one, and where each patient is examined once, twice, or three times a year generally, have come within the classes 1, 2, 3. This should be the experience of those engaged in the larger cities, where well-regulated practices are not uncommon. But in the smaller cities and country districts, where well-controlled practices are less frequent, transient cases brought in by suffering and an undue proportion of the occurring exposures belonging to the classes 4, 5, 6, the results of conservative treatment under these conditions are liable to be unsatisfactory.

My chief purpose in occupying your attention now is to present some of the statistics of an extended practice in this direction.

With a view of making a report of cases, I commenced in March of this year to test the capped pulps as they came before me for observation at the periodical examinations of my patients.

This testing of cases continued through three months, but was curtailed in May by the pressure of work, and had for the same reason to be stopped.

It is a source of regret that I am unable to give you the results of a year's testing, by which the greater portion of over five hundred cases treated in this manner—extending over a period of twenty-one years—would have been brought under observation.

The number of cases examined in the three months was 125, of which number 88 were vital, and 37 had become devitalized or were not responsive to cold.

Of these, there was of 1871 1 case and alive; of 1873, 2 cases, 1 of these dead; 1875, 1 case; 1876, 5 cases, 4 dead; 1877, 2 cases; 1878, 4 cases, 1 dead; 1879, 3 cases, 3 dead; 1880, 5 cases, 2 dead; 1881, 5 cases, all vital; 1882, 8 cases, 5 dead; 1883, 9 cases, 4 dead; 1884, 9 cases, 5 dead; 1885, 16 cases, 2 dead; 1886, 15 cases, 2 dead; 1887, 7 cases, 3 dead; 1888, 19 cases, 2 dead; 1889, 15 cases, 3 dead.

This report exhibits the apparent fact that the proportion of devitalizations was much greater in the early than in the later years. It would

be corrected somewhat, I believe, by a whole year's observation, but it is my belief that the principal reason is to be attributed to the want of skill in the earlier periods and the inefficient therapeutic treatment, or, it would be better stated, the over-medication of the earlier years.

Among these cases there are some of the greatest interest. For one individual there are seven cases, of which two are dead. In these cases in nearly every instance there were long-continued and acute subjective disturbances following the treatment.

Another person had between 1876 and 1886 seven cases, with two dead, and few disturbances. Both devitalizations were of cases pertaining to 1876.

Two patients had each three cases, all dead, wherein no treatment or care appeared to be of avail.

Another had four cases done respectively in the years 1878, 1880, 1882, and 1888. The two latter have recovered by deposits of secondary dentine. In the last one the period between the treatment and the observation was twenty-three months.

In reference to recoveries by secondary dentine, I have no final report to make. In the "American System" I reported twenty-three cases, of which seventeen were detailed. Since then no tabulation has been made. It is probable, however, that many of the quiescent cases which have not been opened have recovered by such deposits.

It would be well at this point in the discussion to consider what indications may be found to determine the state of the pulp, a question brought prominently forward by Dr. Marvin, and given further prominence by Dr. Trueman.

This is an important question. Upon it rests the prognosis of the treatment. I believe it is within our power to know from the symptoms of the case whether the condition of the pulp has probably passed beyond salvable limits.

It is not difficult to determine from the manifestations whether the condition is one of *hyperemia*, consequent upon the existence of hyperesthesia, or whether a state of congestion or inflammation of the organ exists.

In the former there are probabilities of recovery; in the latter the possibilities of ultimate disorganization are immanent. In the first state the indications are subjective only; in the latter they are principally objective.

In the surgical management of the cases, all of the carious matter should be removed without causing pressure of the contents of the cavity upon the pulp or by contact of the pulp with instruments.

In regard to the complete removal of the carious matter, since the importance of its infectious character has been made clear, I have been increasingly careful in this connection, and now believe the lessened percentage of losses to be partly due to this care. In the insertion of the cap and the placement of the filling, the greatest care is required to avoid compression.

In the therapeutic treatment, it should be observed as a cardinal principle that the dental pulp is impatient of medication. It is intolerant of drugs. This is probably due to the fact that the pulp is devoid of the means of conveying away any except such substances as are completely soluble, and at the same time are not irritating to its elements. This consideration leads to the conclusion that there are very few medicaments that can be acceptable to a structure having the characteristics of the dental pulp.

I have elsewhere pointed out that the pulp is remarkably tolerant of such fluid substances as find their way to it by filtration through the gelatinous residue covering it, and that under these conditions it generally has considerable recuperative power, and also have stated that when it has become completely exposed, so as to be acted upon by crude substances, conservative treatment is of questionable propriety.

It here becomes an important question to raise, whether the causes of the disturbances of the pulp are due to those heretofore considered, namely, the changed relations and the chemical irritation, or whether the active cause may not be the infective influence of germ-life. This can only be determined by careful investigation by the positive methods pursued in the study of bacteriology.

The same principle applies in reference to its relation to medications. The remedy which is not carried forward into the general circulation appears to remain, and to act as an irritant.

In the classes of cases which have been indicated as amenable to treatment, my present view is that topical treatment should be confined to the class of disinfectants, and of these such as are not chemical irritants. In later years I have used pure carbolic acid, on the ground that its action is superficial upon the pulp. Since it is very feebly soluble in water, it is reasonable that a very short contact of this chemical would not allow any portion to enter the tissue, and yet the momentary touch would be sufficient to disinfect the surface of the cavity and carbolize the point of exposure.

For some months I have been using as a covering paste the combination of oxide of zinc with a nearly saturated solution of aristol in

oil of gaultheria. At this time I can only report that there appears to be less subjective disturbance. Indeed, I am safe in saying there are fewer after-symptoms.

The treatment for subjective indications of irritation continues the same, and consists in the application to the surface of the gum of aconitum and chloroform in combination.

The physical treatment consists in the avoidance of thermal irritation. This is fulfilled generally by the use of non-conducting filling-materials. Notwithstanding that there are cases which may be immediately filled with metal, the greatest safety lies in their avoidance.

The position I have occupied in connection with the conservative treatment of the pulp has been from the first a tentative one, but has been favorably supported by the results of experience, and has been increasingly satisfactory, as above indicated. It must, however, be conceded that there is no kind of operation in dental surgery which requires more care than this, or where there is greater need of the employment of careful analysis to determine the course to be pursued, or none in which the elements which constitute the real physician come more into the foreground.

Dr. W. A. Conrad, St. Louis. I would like to ask Dr. Jack if I understand him correctly when he says that he examines his cases one, two, three, or four times a year.

Dr. Jack. Yes, sir.

Dr. Conrad. I would like to ask you also what is the cause of pulp-exposure in your practice.

Dr. Jack. In the course of fourteen years it would not be considered a very great many cases to have had five hundred. The causes have been various. I have had repeated instances of finding the pulp exposed in comparatively small cavities.

Dr. Conrad. I would like to ask also what do you call an exposure in those five hundred cases.

Dr. Jack. An exposure I consider when it is actual, not approximate.

Dr. Conrad. You also spoke in relation to a layer over the exposed pulp, so I suppose if there was a layer over it there was no actual exposure?

Dr. Jack. You have misunderstood my statement. I have said, where I had reason to believe the pulp was exposed, I immediately removed the entire carious matter as a matter of safety, so a large majority of the cases I have reported to you are not approximate or probable exposures, but actual exposures that have occurred in that period of time.

Dr. Conrad. I have come a good ways to meet these gentlemen, and it is almost impossible for me to be at a dental meeting and not say something ; and as this question of pulpicide has rather drifted into a question of treatment and results, etc., I thought it might be proper. The gentleman in his paper quoted from an article in the "American System of Dentistry." The gentlemen who have read the "American System of Dentistry" will find in two places there, two opinions, one of them claiming that any irritation upon the pulp which will produce a deposit of secondary dentine, or, as I call it, calcification, will produce death. In a practice of several years in the city of St. Louis, it has been my pleasure to attempt the capping of several pulps. In recent years I have been devitalizing the pulps of some few teeth, and I find that in a great number of cases there has been calcification. It is my opinion wherever we have calcification, or any deposit which produces irritation, we will eventually have death of the pulp. Unless we can get some line of treatment and some line of practice whereby we can avoid producing irritation and calcification, or deposit of secondary dentine, we will in a shorter or longer time have death following such treatment.

Dr. Klump. Some years ago I wrote a paper upon this subject, and I took a different ground from what a great many did in not leaving disintegrating dentine remaining over an exposed pulp when I have any reason to believe it may be exposed. I think in my practice I can entirely coincide with Dr. Jack. A great part of the loss of pulps that are supposed not to be diseased comes from not uncovering them thoroughly. When you come to remove this disintegrated dentine you will find they are probably receded, and the pulp-chamber is not entirely filled up. The pulp will not allow a vacuum. The pulp-chamber wants to be filled up, and if there is a vacuum there, if there has once been disease or inflammation to that extent, and a recession, I think there is likely to be disturbance, and disease and death. I believe we save a large percentage of the pulps we cap.

Anti-Antiseptics.

BY CHARLES MAYR, PH. D., SPRINGFIELD, MASS.

AS the title implies, my paper will be directed against Antiseptics, or, more properly, against the principle underlying the constant use of antiseptics, at least in the extensive degree to which it is practiced by many.

My principal objection to the use of antiseptics lies in the fact that we do not know at all which microbes are useful to the body; we know a few which are harmful to a limited extent, although their harmfulness carries as many elements of good as of bad, but the useful microbes have not been determined yet at all, and there is hardly any doubt (to judge from analogies) that there exist thousands of kinds.

To give a few analogies, I would only refer to observations in botany. Plants do not assimilate ammonia as such. It has first to be transformed into nitrates. If you expose a mixture of lime, straw, and, say, urine to what is usually called the action of the air, you will at first observe a slight odor of ammonia, much less than if no lime was present. After about a year every trace of ammonia has disappeared, and in its place will be found nitric acid in combination with the lime, now ready to be taken up by the plants. The same occurs in the soil. It has been found that no transformation of ammonia or nitrogenous substances into nitrates takes place in the soil without the presence of a microbe,—the microbe of nitrification,—hence on the existence of this microbe depend most plants. It is a most useful microbe.

Farmers are well aware of the fact that fresh manure is apt to “burn” or kill vegetation, simply because the ammonia contained in it has not undergone the process of nitrification; but those fields will be found very richly manured about a year after having received the dose of ammonia.

In another case it has been observed that a tree belonging to the variety of *Quercus* (oak) cannot live without a microbe parasite at its root. That parasite assimilates the salts for the purposes of the tree. Of course the parasite does not do such an unselfish act merely for the fun of the tree ; it wants to live, and the tree makes use of the parasite by providing him with the proper place of implantation and growth. This is another specimen of a useful microbe.

In the human system, a perfect breeder of microbes is the pancreas. The pancreatic juice is loaded with microbes without which food would not be properly digested in the stomach. A simple solution of meat prepared by chemically pure pepsin is entirely different from the same solution as prepared in a normal process of assimilation by the peptic and pancreatic juices and the microbes in them.

The process of digestion is almost the process of putrefaction ; digested food contains the products of putrefaction, even the offensive odor, showing the unmistakable action of microbes. In a similar manner, a number of useful microbes occur in the mouth. If it was not, it would become infected by harmful microbes every second of a day. Microbe kills microbe. Even the cells of the human tissue, the blood-corpuscles, leucocytes, may be said to be individual microbes of somewhat larger proportions. The cells of the mucous membrane of the mouth would not answer for other mucous membranes. The cells of the kidneys could not be substituted for those of the nose, nor those of the liver for those of the eye ; even within the same organ the various cells differ materially, and antiseptics act upon all microbes and even upon the cells. The latter, while they are not killed by a moderate application, are certainly weakened.

We have not to lose sight of the fact that the whole process of living is the resultant of a continuous struggle, the destructive action of certain outside microbes and the conservative, defensive action of the microbes inhabiting the body. The red and white blood-corpuscles are microbes. For instance, in malaria, the microbe of malaria imbeds itself in the red blood-corpuscles and thus evades the destructive attack of the white corpuscles.

In this struggle for superiority we have always to reckon with these two forces. The body, or a certain tissue, may succumb from a two-fold combination : excessive outside attack of microbes with normal strength ; this is exemplified in cases where people have survived, say, any ordinary attack of cholera but have succumbed during a violent epidemic ; or the attack may be moderate, but the defense of the tissues weak. In that case even an infection perfectly harmless to a

normal body will prove fatal, as is well shown by the various kinds of chancres. In ordinary strong constitutions it is one of the mildest, and in fact an entirely harmless venereal affection ; but let the same small sore be started in persons with broken-down constitutions, and the destructive forms of phagedenic and of gangrenous chancre occur.

Similar observations are made in regard to consumption ; it is only the weakness of the system in the scrofulous which makes them less resistant against the attacks of the bacillus of tuberculosis, rather than this attack. Most people, at one time or another in their lives, are severely exposed and infected by the bacillus of tuberculosis, and as the post-mortems have shown, in more than one-half of the corpses the remnants of such infections can be found ; but strong constitutions overcome the enemy.

By the use of antiseptics we are apt to destroy this equilibrium between attack and resistant force. An antiseptic, while for a time being it destroys the enemy, also weakens the destroying cells, and if, therefore, another attack should come and our cells do not receive the outside auxiliary of the antiseptic, they are apt to be weaker in the struggle than they would have been without the antiseptic ; thus the use of antiseptics, especially for constant application, necessitates the continuous application ; it is with antiseptics as with alcohol, opiates, and other similar drugs.

Another element is that of the persistence of the infection-destroying organs to keep on destroying. Without the enemy to be destroyed continuously supplied, the warriors will become enervated in a short time, and there can be hardly any doubt that all the principles which hold good for the body as a whole in a certain modified form also hold good for every individual cell. Not those nations are the most valiant that have no enemy, or from their location and surroundings for centuries have been free from all attacks ; nor are those nations the strongest whose whole existence had to be spent in repelling attacks.

The use of antiseptics, reasoning from the few analogies and general principles stated, should therefore be limited to those cases where there is evidently a superior strength of the attacking microbic enemy, but their use should be discontinued as soon as the tissues are strong enough to take care of the attacks themselves. Thus, occasionally in the mouth a pyogenic condition has taken such a firm hold and the tissues are so weak that outside help is imperatively demanded ; or, in a decayed cavity of a tooth, the attack continually maintained by good supplies from without is much stronger than the weak defenses

of the tooth, and therefore outside help is needed to eject the enemy and erect golden and amalgamic barriers against further attacks.

But quite different from such truly surgical and justifiable uses of antiseptics, in which class I also count a well-shaped and well-handled excavator, which are only to be applied while the injury lasts, is the constant drenching of tissues with antiseptics. I think that just as you would not leave an excavator sticking in a tooth all the time so as to be ready when the next decay comes, so should you not deluge the mouth continually with chemical excavators—antiseptics—when there is no call for them.

In certain cases where there seems to be an abnormal weakness which has given rise to the implantation of a, as yet, not well-defined microbe, namely, that of catarrh, a mild, constant, well-gauged antiseptic may be advisable; or, by an application of antiseptics in surgical doses, the rapid and radical elimination of the enemy might be attempted.

We are threatened in this age with a new phobia, the microphobia. People have heard of microbes; they think they are a new thing, and they suspect everywhere a fatal infection. They would rather disinfect their food than cook it. Fortunately, all of our ancestors have lived through all the microbes, have swallowed, breathed, and digested quintillions of them. Why should they all at once begin to be unduly harmful after our ancestors have learned and transmitted to us, or more correctly, to our tissues, how to fight them? Smallpox, the plague, measles, were infinitely worse in olden times than now,—not to speak of diseases like leprosy, against which probably nine hundred and ninety-nine thousand in a million are proof nowadays.

Our tissues, unhampered by drugs, will, in the long run, take care of invading microbes much better than ever so skilled outside interference.

For surgical uses antiseptics are invaluable. For hygienic purposes they are out of place.

Nothing is indifferent in the plan of the world; everything is a blessing in the right place, and a curse in the wrong.

DISCUSSION.

Jos. Head, M.D., D.D.S., Philadelphia. In my opinion, the future advance of dentistry must be along the line of antiseptics, or else the advance will cease. The theory of Dr. Mayr is ingenious, but unfortunately the proof is based upon analogies which at best are misleading.

The comparison of the oral microbes with germs that inhabit manure, the oak, the stomach, and the pancreas, would seem to me illogical. No one denies that a microbe may be useful in its proper place, but if the bacilli of manure, or of the small intestines, find their way into the mouth they at once become sources of incalculable evil. Because certain microbes aid digestion, because certain germs assist the growth of an oak, is there any proof that bacilli exist in the mouth which are able to destroy putrefactive spores? I am afraid not. The presence of such useful germs can only be proved by a microscopic demonstration, which is yet to be presented to the profession.

Dr. Mayr further says "that the harmful microbes in the body carry as many elements of good as bad." What good may we find in the microbes of smallpox, scarlet fever, measles, pyorrhea alveolaris, trichinosis?

He also says that unless the microbes are given the elements of disease to destroy, they will lose their vigor; that our tissues, unhampered by outside interference, will ward off infection much better in the long run.

This, from a broad point of view, is certainly true. If diseases were allowed to ravage the human body unimpeded, perhaps in three or four thousand generations the sanitary force of the body might rise to the occasion, and thus, by this long-continued process of elimination and development, man's system would become robust beyond all power of attack from the most dangerous microbe.

But, alas for the selfishness of man! He will not bear the toothache all his life in order to benefit the teeth of his grandchildren a thousand years removed. Neither will he eat raw pork so that his descendants may withstand the dreadful trichinosis with impunity. He actually discovered a cure for smallpox, without waiting for his system to become accustomed to that disease through the ordinary course of nature. In fact, man has so little regard for the future development of the human race, that he gladly avails himself of all aids to present health. When told that his toothache ought not to be cured, in order that his teeth, a thousand years hence, may acquire curative power, might he not exclaim, "The teeth have been left to take care of themselves since the creation of the world. Self-curative power has not yet come, and I doubt if it ever will. I ask immediate relief."

And we, as professional men, intend to relieve him. Else why are we here to-day? If, as Dr. Mayr says, the tissues are not bettered by drugs and outside interference, let us disband at once. Cleanliness must be our first consideration. Where this is impossible, as in

pyorrhea alveolaris, antiseptics is imperative. Even when a tooth has been thoroughly excavated, I can see no harm in soaking the walls with bichloride, or carbolic acid. The thin layer left in the cavity, dried by hot air, can do no harm, and must give greater security to the life of the filling. In cases of pyorrhea alveolaris, or in any condition where chronic sepsis of the oral cavity exists, a mild antiseptic gargle may do great good, and I personally have never noticed any weakening of the mucous membrane from such washing. In the presence of an acid saliva, lime-water should be extensively used. Healthy tissue needs no assistance, but in skillful hands antiseptics are invaluable servants.

In closing, I will quote briefly from the beginning of Dr. Mayr's paper. He says, "My principal objection to antiseptics lies in the fact that we do not know which microbes of the body are useful. Many are harmful to a limited extent, but even the bad have as many elements of good as of evil." Thus he says that the bad effects of decay are counterbalanced by the good effects; that we must not destroy the noxious microbe lest the good perish. Thus does he not only war against antiseptics, but cleanliness. For if the microbic fluids of the mouth do as much good as harm, do we not commit an indiscretion when we use a tooth-brush and a tooth-pick?

To follow this idea to its logical conclusion, we should be forced to admit food collected about the necks of the teeth might be a source of enamel welfare. It might even act as a gentle stimulant to the gums. Perchance the microbes rising on the inhalations might force an entrance into the lungs, and there grappling give the cells of the body so excellent an opportunity to get up their muscle that they might eventually become strong enough to conquer the puissant germs of phthisis.

Happy thought! Hereafter, instead of removing the decay from a tooth, let us cherish it so as to give the good microbe a chance to either strangle or reform his evil companions.

This, then, is the logical deduction to be drawn from our friend's statement, "that we should refrain from injuring the good microbe even if the noxious germ be allowed to go unharmed." Gentlemen, I cannot agree with him. If a delicate pair of pliers could be invented that would pick out the bad cells and thus leave the good microbe to pursue his virtuous occupation unimpeded, I should be hushed into blushing silence.

A man is judged by the company he keeps. So it is with the microbe. The good citizen who unfortunately gets mixed up in a

murderous mob must be swept down by the mitrailleurs that were intended solely for ruffians.

The mouth must be kept clean. Until the happy time when the good microbe shall learn to do it, man must come to the rescue. Yes, as I said before, when white acid lines appear about the necks of the teeth, I should not only advise a tooth-brush, but also the rinsing of the mouth with lime-water morning and evening.

The pleasant antiseptic mouth-wash "listerine" will not only club into submission all riotous microbes, but also it will act as an admirable guardian in times of peace; and the layer of bichloride within a cavity will serve as a faithful watch-dog for tearing the trousers of any intruding harmful bacilli. Gentlemen, I am a firm advocate of asepsis, but when that is not possible, let us have antiseptics.

George W. Weld, M.D., D.D.S., New York. In speaking in favor of antiseptics, I trust that neither Professor Mayr nor his friends will consider that I belong to that class of people who would "rather disinfect their food than cook it." I am inclined to think that the professor believes only half of what he says, at least half of what the title of his paper would imply, for he commences his essay against antiseptics, and ends it, with a statement that "for surgical uses antiseptics are invaluable," but "for hygienic purposes they are out of place." Gentlemen, whether in the domains of surgery or in the realms of hygiene, a *septic* is a substance that promotes putrefaction. *Anti* is a preposition signifying *against*, *opposite*, *contrary*, or *in the place of*, used in composition in many English words. Therefore, when we refer to the word *antiseptic* (anti and septic), we mean a remedial agent that is opposed to or counteracts putrefaction or a putrescent tendency in the system. *Anti-antiseptics* means something *against antiseptics*. This newly-coined word would seem to imply, from a pathological standpoint, something that *favors* a putrescent condition.

The use of antiseptics usually follows in the train of special pathological conditions; and they are not *constantly* used, as the writer of the essay would have us believe. The distinction between a useful and a harmful microbe has its parallel in the distinction that is made between physiology and pathology.

An antiseptic, then, in connection with a microbe or a bacillus, signifies a pathological condition of affairs, and is simply a remedy,—something, as its name implies, which reaches out to alleviate or counteract unnatural and morbid conditions. The good and harmless microbes, which the professor alludes to, must be considered from purely a

physiological standpoint; and an antiseptic which opposes and destroys the malignant and destructive microbe in no wise, so far as I can judge, interferes with the life of his brother, whose friendly object, apparently, is to maintain and prolong, rather than shorten, the life of any one of the various organs of the human body.

In connection with this part of the subject let me quote a few of the professor's words: "We have not to lose sight of the fact that the whole process of living is the resultant of a continuous struggle,—the destructive action of certain outside microbes and the conservative defensive action of the microbes inhabiting the body," a statement which I wish to observe right here, in parenthesis, has never been demonstrated. "In the struggle for superiority we have always to reckon with these two forces. The body, or a certain tissue, may succumb from a twofold combination: excessive outside attacks of microbes with normal strength; this is exemplified in cases where people have survived, say, an ordinary attack of cholera, but have succumbed during a violent epidemic; or the attack may be moderate but the defense of the tissues weak. In that case even an infection perfectly harmless to a normal body will prove fatal, as is well shown by the various kinds of chancres. In ordinary strong constitutions it is one of the mildest, and in fact an entirely harmless venereal affection; but let the small sore be started in persons with broken-down constitutions, and the destructive forms of phagedenic and of gangrenous chancre occur."

In one respect it may be said that the professor is right in stating that in all acute diseases occurring in persons with broken-down constitutions,—and for that matter, it may be observed, in those persons already affected with some important disease,—the prognosis and chances of recovery are not so favorable as when healthy subjects are attacked. At the same time, if we eliminate the complications, whatever the complications may be, that add to a probable fatal termination, it may be said that neither the constitution nor the physical strength of the patient lessens the intensity of the disease, or gives hopes of any certain recovery. For instance, it is well known that where a strong and healthy person is attacked with some acute and malignant disease, the vital powers of life become so suddenly depressed that death results from exhaustion. On the other hand, it has been observed time and time again that an apparently anæmic person, but possessing a certain essential nerve-force, will withstand the sudden onslaught of the disease, and recover, when, under similar conditions, the once strong and healthy die.

It is on this account that the intelligent physician at the bedside oftentimes anxiously waits for the *crisis*, and frequently avails himself of any antiseptics or any stimulants that may suggest themselves to his mind, knowing that if he can bridge his patient over, so to speak, even for a period of a few hours, the crisis will have passed, and a favorable prognosis and a sure recovery will follow.

But more particularly is this point emphasized when the professor speaks of chancres as being "one of the mildest, and in fact an entirely harmless venereal affection." In conversation with a distinguished physician* of New York who makes venereal diseases a specialty, I have learned, and am confident in saying, that if the essayist refers to the initial syphilitic sore, I must most respectfully beg leave to differ with him as to the cause of the mildness of the effects of the virus upon the constitution. He assumes that this is due to the fact that the resisting normal microbe overcomes the onslaught of the active elements of the syphilitic virus, whereas facts conclusively prove that whatever mildness syphilis possesses among civilized people is due to the slow process of syphilization, extending over a period of certainly four hundred years in Europe, and perhaps five thousand years in China, according to documents found in the Chinese archives. The body to-day receives not necessarily an attenuated virus, but is in a condition to receive the syphilitic virus without being malignantly overwhelmed, this condition being due to having been for centuries under its influence (modified materially from the healthy man of the thirteenth century in Europe), and the tissues impressed continually with the poison, which, until comparatively recent years, has been allowed to run its course unchecked by treatment; and here I venture to remark that the highest type of antiseptic treatment—antiseptic treatment the result of which continued for years under proper scientific appreciation of the effect of the medicine, mercury—antagonizes the virus and restores the tissues to a point very nearly, if not wholly, approximating the healthy condition of the civilized man of the present age.

In proof of this claim, we have had in recent years evidence of the effect of syphilitic virus upon a healthy and strong constitution, viz: that of the inhabitants of the Sandwich Islands, where the virus which affects civilized man so mildly developed all its malignant and destructive features, and has decimated its population and dwarfed the growth of that once magnificent type of man.

There remain in connection with the professor's paper one or two

* W. R. Chichester, M.D., New York.

statements regarding which I should be very glad if he would furnish some information and proof.

1. By what authority does he state that the pancreas is a perfect breeder of microbes?

2. By what authority does he state that food cannot be properly digested in the stomach without the aid of the pancreatic juice loaded with microbes? So far as I have been able to learn, the *pancreatic juice never enters the stomach*, but is discharged through its duct into the duodenum.

3. By what authority does he state that the process of digestion is almost the process of putrefaction? In this connection I quote from Dalton's Physiology.* In speaking of the gastric juice he says, "A further peculiarity of the gastric juice is its *resistance to putrefaction*. While other animal fluids, as the saliva, bile, pancreatic juice, mucus, and blood, enter into putrefaction with great readiness, gastric juice may remain exposed to the air at ordinary temperature for months without developing any putrescent odor or losing its characteristic properties. It becomes somewhat darker in color, and after a time deposits a brownish sediment, but retains its acid reaction and its powers of digesting albuminous matters. It will even arrest putrefactive changes which have already begun in organic substances, and consequently putrefaction *does not go on in the living stomach*."

Beaumont preserved fragments of meat unaltered for a month in gastric juice, while other portions kept in saliva were putrefied in ten days. Spallanzani found in the stomach of a viper the body of a lizard which had remained for sixteen days without putrefactive alteration, and similar observations have been made by other physiologists. According to Richet, the antiseptic property of gastric juice depends entirely on its free acid, and not in any degree on its organic ferment.

On another page† the same authority states that "the nature of the change caused by digestion in the alimentary substances is partly physical and partly chemical. But although this change is indispensable for the absorption of these substances in due quantity, it does not consist in any profound alteration of their chemical characters. The alimentary materials are not decomposed nor converted into substances of a different kind. They are simply transformed into soluble materials of the same class with themselves. The carbohydrates after digestion remain carbohydrates, the albuminoid matters are

* "A Treatise of Human Physiology." John C. Dalton, 1882, p. 157.

† Ibid., p. 139.

still albuminoids, and the fatty substances retain the chemical properties of the fats. The transformation of starch into glucose by the digestive process is an act of hydration, which may be accomplished by continued boiling with water and a mineral acid outside the body. Albuminous matters, in digestion, are converted into peptones. This change is also regarded as a hydration, and it has further been shown that albumen may be made to undergo a similar transformation by long boiling in acidulated water, or by boiling at a high temperature under pressure. Thus the animal ferments, in the alimentary canal, act by inducing rapidly, at the temperature of the body, changes which would otherwise require a longer time or more powerful agencies. Lastly, the fatty substances are reduced to a state of emulsion, and in this condition diffused through the digestive fluids. This effect, which is mainly due to the contact of an albuminous liquid, may be aided by a partial acidification and saponification; but the principal mass of the fat, in undergoing the digestive process, only assumes the form of a chylous emulsion." All the alimentary substances are accordingly made ready for absorption without losing the essential features of their chemical constitution.

4. I would like to ask the professor by what authority he compares and relegates the red blood-corpuscles of the human body to the level of microbes? If I understand their function, it is to serve mainly as carriers of oxygen. The readiness with which they absorb this element from the atmosphere, and their changes of color depending upon its supply or withdrawal, indicate that they have a special relation to its introduction and distribution in the body. As a rule, in animals where the red blood-corpuscles are of large size and few in number, the activity of the vital functions is below the average, while in the species where they are smaller and more numerous the processes of respiration, circulation, nutrition, and movement are increased in rapidity to a similar degree. The strongly-marked physical and chemical characters of the red blood-corpuscles correspond with their importance in the functions of vitality.

5. By what line of reasoning does the professor conclude that for "surgical purposes antiseptics are invaluable," but for "hygienic purposes out of place"?

Where are the various forms of epidemics which, at intervals, in former years, covered the lands with desolation and death? Of what avail, may I ask, are the rigid sanitary precautions exercised by every board of health in every seaport town, reaching from the coast of Maine to the Gulf of Mexico, if our modern scientific knowledge

of hygiene and antiseptics is only a myth? If we assume the cause of epidemics to be germs, then the evolution and development of organisms therefrom require certain conditions.

With our present knowledge the mode in which the susceptibility to these causes is destroyed may not be fully explained, but we do know that the seed must have its appropriate soil, and that various circumstances may, on the one hand, promote, and on the other hand arrest its germination.

We know that in some inconceivable mode contagious and infectious diseases effect a permanent destruction of the unknown conditions within the body, on which depend the development and multiplication of germs which, it is assumed, constitute the causes of these diseases; and experience has taught us that the application of our present scientific knowledge pertaining to hygiene and antiseptics serves to arrest, if not entirely prevent, the epidemics and scourges of former years.

In conclusion, as an advocate of the use of antiseptics, I will now leave my interrogation points long enough to call attention to an antiseptic mouth-wash which I have used extensively in my own practice during the past six months. It is not a secret nor a non-professional preparation, for upon the label of each bottle the *formula* is printed; and, although it is a proprietary compound, I am sincere in saying that I have no pecuniary interest in the same, nor do I ever expect any. I allude to it here, at the present time, in connection with the subject of antiseptics, believing that it approaches nearer the *ne plus ultra* of a scientific antiseptic and disinfectant mouth-wash for dental surgery than any I have ever come across.

The technique of modern chemistry permits the manufacture of a compound, each minim of which contains 1-1000 of a grain of chemically pure carbolic acid, and 1-50,000 of a grain of chemically pure bichloride of mercury, and by a process of dynamization and potentialization guarantees an absolute accuracy and uniformity of the product. Furthermore, it is comparatively inexpensive. For those then who believe in the use of antiseptics and disinfectants (and in considering the constant fermentation going on in the mouth, and the susceptibility of the saliva to putrefactive changes, they would seem a necessity), I know of no better compound for the purpose than that which is contained in the bottle which I hold in my hand, and called "*Quickine*."*

* *Quickine*. Standard Chemical Co., sole manufacturers, 90 and 92 Broadway, New York.

Some of the Methods and Results of Bacteriological Work.*

BY HENRY LEFFMANN, M.D., D.D.S., PHILADELPHIA, PA.

A SHORT time ago a graduate of the Woman's Medical College of Pennsylvania was appointed to a responsible position in a general hospital in a progressive and populous city of one of the Northwestern States. She soon discovered that no microscope was to be found among the appliances, and naturally, feeling seriously the need of such an instrument, asked the managers to obtain one. They demurred, but finally consented to expend thirty dollars for the purpose, declaring that they understood that an instrument could be obtained for such a sum. They were much surprised, and, I believe, somewhat incredulous, when the young woman told them that she could, with proper lenses, detect the *Bacillus tuberculosis* in the expectorations, etc.

I refer to this incident, which comes to me through trustworthy sources, to show that in spite of the extensive publication of the facts in regard to bacteriology, a want of appreciation of its scope and value still exists even among many of the better educated. It is the purpose of the present contribution not to argue vexed questions of pathology or bacteriology, but to exhibit to this meeting some of the actual results and the methods by which they are obtained.

It is proper to say that my own interest in the subject is practically

* This paper was written by request of the Committee on Programme, and was intended as an introduction to an exhibition of specimens, cultures, etc. Unfortunately, Dr. Leffmann was taken suddenly very ill a few hours before the paper was to be read, and was obliged to return at once to Philadelphia. The main object of the paper, the exhibition of specimens and methods, was thus defeated.

restricted to the biological and chemical relations, and that with the purely pathological I have but little experience.

The existence of minute forms of life more or less intimately associated with putrefaction and fermentation, even with disease, has been known for a considerable period. More than two hundred years ago Leeuwenhoek, a Dutch naturalist, described and figured several forms, among which was a characteristic spiral form found in the mouth. He also recognized a close relationship between some of these forms and common decompositions of organic matter.

Advance, however, in knowledge was slow, due largely to the want of means of investigation. The minuteness and simplicity of the various forms render it necessary to employ optical apparatus of high magnifying and excellent defining powers, and when these aids were attained, it was still impossible to differentiate forms accurately, as under one designation several distinct species might be included. Thus the rod-like forms occurring in ordinary decomposing organic matters were grouped under the general title *Bacterium termo*, a term which is still supposed by many to comprehend the species causing putrefaction, but in reality several distinct species are concerned in such changes, and the specific name has no scientific value.

The advances of the last fifteen years have not been due solely to improvements in lenses, but to the introduction of two accessory methods, for the application of which we are largely indebted to Koch. It is proper, I think, to remark here that while we can scarcely overestimate the service which the distinguished Berliner has rendered to science, we must regret that he has perhaps unduly but unintentionally overshadowed another worthy worker, Pasteur. The fundamental principles of the science were elucidated by the French scientist, but the greater practical value of some of Koch's results and the aid of the ingenious methods of investigation have lent an exceptional brilliancy to the German worker.

The practical aids to bacteriological investigation are the employment of staining fluids and of solid culture-media. By the application of the former, species that are similar in form, size, and habit of growth may be accurately distinguished. These staining-fluids are mostly aniline colors. Among the applications of this method may be instanced the distinction of the *Bacillus tuberculosis*, which can be stained of a special color, and thus not only brought out prominently among the tissues of the organ under examination, but distinguished from other organisms which resemble it in form, but do not take the stain in the same way or do not retain it. The second method of

research is the employment of gelatinizing culture-media, which is substantially as follows: A nutritive medium, generally meat-broth, with peptone, is mixed with about 10 per cent. of gelatine, which causes it to solidify on cooling. If the mass be melted at a low temperature, a small amount of any fluid containing a miscellaneous collection of micro-organisms added, thoroughly mixed, and then allowed to solidify, each individual organism will become a center of development and form a colony of its own kind. Thus, organisms too minute to be seen, except under high magnifying power, will gradually form a mass visible to the naked eye, a portion of which may be transplanted to new soil and distributed in the same manner. By this means, sooner or later, a so-called pure culture will be obtained; that is, a colony consisting of a single species.

A modification of this method is described by Dr. Miller, in his work on "Micro-Organisms of the Human Mouth." This consists in pouring the melted mass of sterilized culture-medium on a flat plate, allowing it to harden, and then taking up on the point of a wire some semi-solid mass containing micro-organisms; the wire is drawn a number of times in parallel lines over the surface of the medium. The attached material is gradually distributed, rather thickly at first, but gradually thinning out so that the last lines will show very distinct separation. Such a method is peculiarly suitable for differentiating the micro-organisms of the deposits around the teeth.

The most interesting advances in knowledge in this field have been not so much the identification of species, as in the recognition of the chemical actions brought about by the growth of micro-organisms, especially in the decomposition of albuminous matters. Some of these facts have been known for years, without the exact relationship and bearing having been suspected. Thus it was discovered more than a generation ago that ordinary putrefactions develop, in addition to the offensive gases, crystallizable bodies of definite chemical character, and that when putrefaction is allowed to go on, especially with free access of air, the final result is the formation of ammonium compounds and nitrates. By patient investigation, many of the intermediate compounds have been isolated and found to be of basic quality,—that is, resembling such substances as morphine and strychnine, though generally more easily decomposed. From their association with dead and decaying material these basic bodies were called "ptomaines," from a Greek word meaning "corpse." Research, however, has greatly added to the number of classes of substances that may be produced by such decomposition, and we now know that

every one of the great groups of organic bodies may be produced in these decompositions. Now, it has been established beyond doubt that all such decompositions of albuminous bodies that take place under natural conditions, that is, the so-called "spontaneous" changes, are due solely to the growth of micro-organisms, hence it follows that the products of the decompositions are merely the secretions and excretions of such micro-organisms. Artificial distinctions that have but little scientific value have arisen in consequence of the ignorance of the real nature of such decompositions. Thus changes attended by markedly offensive odors are generally known as putrefactive changes, while those not so characterized are called fermentative changes. The distinction, however, principally arises from the nature of the material decomposed. Since this chemical question has a direct bearing on dental pathology, we may discuss it more in detail.

All our knowledge tends to indicate that no vital action exists without the presence of nitrogen, and probably also of phosphorus, the latter in the form of phosphates. No non-nitrogenous body can, therefore, alone support life or produce tissue, but such bodies may incidentally contribute to vital action and constitute food. Thus the fatty and starchy matters which we take into our system cannot certainly alone form our tissues, but the carbon, hydrogen, and oxygen in such foods may be utilized either as a source of energy or as a contribution to such tissue-building. Micro-organisms are but an epitome of the human being. Commonly considered as vegetable, they have some chemical and physiological functions which ally them to the animal kingdom, among which we may mention their power of consuming directly nitrogenous food. Now such micro-organisms growing in water, soil, and other places, in scanty or abundant supply of nitrogen, as the case may be, can use up as food non-nitrogenous articles. Both classes of food once consumed are chemically changed and the products excreted. Since nitrogen, when not in an oxidized condition, has usually distinct base-producing power, we are not surprised to find that the products of decomposition of albumin, fibrin, etc., are the bases heretofore called the "ptomaines." The sugars and starches, containing no nitrogen, cannot give rise to basic substances, but are excreted in various oxidized forms as acids, alcohols, or other bodies. Common alcohol, for instance, is produced from sugar by the growth of microscopic plants, which doubtless feed on the sugar and, splitting it up into carbon dioxide and alcohol, excrete both those bodies. Although in such cases we overlook the play of the nitrogen in the experiment, yet the yeast-plant cannot grow in a

medium absolutely free from available nitrogen. Further, alcohol may be converted into acetic acid by the action of a certain micro-organism, and lactic, butyric, and other acids may be formed from the same source. We have here a simple explanation of the chemical process by which the acids are formed in the mouth; micro-organisms are found abundantly in that cavity, and a supply of nitrogenous material and phosphates is always at hand; the temperature is favorable to the growth of many species, and hence an active development takes place. Now if the albuminous matters were alone concerned, the products, though offensive in odor, and possibly somewhat irritating, would have but little effect upon the enamel of the teeth, since they would not be acid, and hence produce but little decay; but the forms of sugar or starch which also exist in the mouth are brought into the cycle of changes, and acids are formed, especially lactic, by which the tooth-enamel is corroded. In this primary effect the tooth takes only a passive part, but when the dentine is exposed, its organic nitrogenous matter, losing its vital resistance, succumbs to the influence of the micro-organisms and becomes invaded by them. This is the simple story of dental caries, for the elucidation of which we are so largely indebted to Dr. Miller, of Berlin.

Another class of products arising from the action of micro-organisms has been made known, but information is still very incomplete. It has been shown that many species, probably all, secrete digestive agents by means of which they transform the ingredients of the medium in which they grow into compounds suitable for assimilation. Thus the yeast-plant secretes a substance which has been called "invertase," and has the power to convert cane into grape-sugar. Other digestive agents have peptonizing power.

It is not appropriate here to speak at any length as to the classification of micro-organisms, but I may say the entire group is now generally classed under the term "microbe," and that subdivisions have been made, based on the form of the individual. Thus we have the rod-like form, called "bacillus;" the spherical form, called "micrococcus;" the spiral form, called "spirillum."

This arrangement is very unsatisfactory. A natural classification must be based on the methods of reproduction, and must show the relationships by descent, if possible. The forms are, however, so minute and simple that up to the present time such a classification cannot be attained. For my own part, in view of the uncertainty, I would prefer to discard all subdivisions and provisionally include all the forms under the general term bacterium.

DISCUSSION.

Domingo M. Sabater, M.D., D.D.S., New York. At one of the last meetings of the New Jersey State Dental Society, I was honored by being asked to take part in the discussion of the paper which Dr. Henry Leffmann, of Philadelphia, was to read before these societies. It was a surprise for me to hear such an unmerited selection, and although not possessed with the ability, but at least with the best feelings and wishes, I acquiesced at the time. To fulfill my promise, and in response to the essay, I must say that I do not think there is much in its contents for discussion, as almost every point in it is based on fundamental principles which practical experience has proved beyond doubt. The doctor dwelt, as he says at the beginning of his paper, "strictly on biological and chemical relations," which leave no chance for debate. I will only take exception to some points.

In years past we used to say that "mathematics was the truest science," but at the present time we can safely add that we have another nearly as true. This is microscopy. By the aid of the latest methods and preparations, and a good microscope, we can invariably detect the smallest form of micro-organisms and their different classes. The microbe theory is not unknown to science, as it can be traced as far back as the middle of the first century, when of course only a faint idea of it was conceived, but unfortunately not properly investigated, but left in darkness until the seventeenth century, when Anthony Van Leeuwenhoek, as it has been stated, had the glory of discovering the presence of microbes in the oral cavity. At the beginning of the present century different investigators placed this theory on a more solid scientific basis. Since then it has been daily advancing, till we hear in relation to it among others the immortal names of Pasteur and Koch.

Lately the improvement in the mechanism and lenses of the microscope, and other necessary auxiliaries, as the condenser, or illuminating apparatus, due to Abbe of Jena and to Ziess, has made it to medical and dental practitioners their best gift, companion, and support. We will not forget, as the essayist also states, the late advancement in the preparation of specimens. The two methods he mentions, consisting of the staining process, or "micro-chemical reaction," so called, due to Koch, Weigert, and Ehrlich, and the solid culture-media, are in my humble opinion the strongest bases for practical bacteriological researches.

We are grateful to Dr. Leffmann for stimulating in us the desire for

investigation into the bacteriological and microscopical realm, and we will not forget that the latter has been advanced also for the last twelve years by Professor Carl Heitzmann, of New York.

Dr. Leffmann, in speaking of the staining-fluid methods, says, "By the application of it, species that are similar in form and habit of growth may be accurately distinguished." He mentions an instance, "the *Bacillus tuberculosis*, which can be stained a special color and thus distinguished from other organisms which resemble it in form, but do not take the stain in the same way, or do not retain it." To this permit me to add that the bacillus of leprosy, discovered by Hansen and Neisser in 1880, has the same form, size, and appearance under the microscope as the *Bacillus tuberculosis*, and although susceptible to the aqueous aniline solution, yet at the same time it takes exactly the same stain and retains it, similarly to the *Bacillus tuberculosis*.

Now, finally, I would like to take exception to the position assumed by the essayist, "that caries of the teeth is accounted for in such a summary manner;" and as he cites Dr. Miller, of Berlin, I would like to ask permission to quote from this gentleman a few lines published in the *Dental Cosmos* in 1883:

"There is no difficulty in accounting for the source of the acids concerned in the caries of the teeth. The saliva is impregnated with acids in various special and general disorders of the system; acid is brought into the oral cavity with the food and in the administration of medicines; but by far the greater part in the decalcification is to be attributed to those acids which are produced within the mouth by fermentation, viz: lactic, acetic, butyric, etc. A mixture of 68.0 grams of saliva, plus 1.0 bread, plus 0.5 meat, plus 0.5 sugar, kept for forty-eight hours at the temperature of the human body, generated more than sufficient acid to decalcify the entire crown of a molar tooth. Pieces of sound dentine, placed in a mixture similar to the above, became in ten days decalcified to the depth of half a millimeter. . . .

"Do bacteria ever penetrate directly into perfectly sound enamel or dentine, and do they perform any part in the decalcification? I have already referred to the gradual diminution of the bacteria in number, as we go from the outer to the inner margin (*i.e.*, from the surface to the deeper parts of the dentine), till at the inner border but few or none of the tubuli are found to be infected. This fact, which leads us to the conclusion that the micro-organisms cannot penetrate beyond that point to which the tissue has been softened by the action of acids, may be readily confirmed by the examination of the softened

tissue taken from different depths of a cavity of a carious tooth. The same gradual diminution in the intensity of the infection will be observed, and at the boundary between healthy and softened dentine it is, with the proper precaution, always possible to obtain dentine which has evidently been subjected to the action of acids, and which yet does not contain any bacteria. . . .

"We come now to a second question: Have the organisms found in and upon decayed teeth the power to effect the decalcification of the same? In reference to this question the following experiments were made:

"1. Pieces of perfectly sound dentine, handled with great care, so as to be kept as free as possible from all foreign matter, were placed in small vials and covered with a drop of distilled water. These were then infected with leptothrix, bacilli, and micrococci from decayed tooth-bone, and kept at a temperature of 35° to 38° C. If now the organisms were capable of decalcifying the tooth-substance, we should expect, first, a softening of the tooth-bone; second, the infection of the softened part; third, an increase in the number of bacteria and cloudiness of the liquid; fourth, since the bacteria could accomplish the decalcification only through the generation of an acid, we would expect an acid reaction of the liquid.

"These flasks were observed for four months. For the first few days an increase in the number of bacteria was apparent, but as soon as all matter upon the surface of the pieces and at the exposed ends of the dentinal fibrils was consumed, the numbers diminished, and at the end of the four months only now and then a micrococcus was to be seen. A cloudiness of the liquid did not occur, an acid reaction could not be detected, nor were the pieces of dentine changed either microscopically or macroscopically.

"2. Similar pieces of sound dentine were kept for the same time under the same conditions, with the addition of several pieces of decaying dentine, so as to insure the presence of great numbers of bacteria. The result was the same as in the first experiment. Microscopic sections failed to reveal the presence of bacteria."

In another paragraph he states, "The invasion of the fungi is always preceded by the extraction of the lime-salts. The fungi have not the power either to penetrate or to decalcify sound dentine."

I would like to state that the acids produced by the fermenting process, which is said to be carried on by organisms, besides decalcifying the inorganic portion of the tooth, become irritants of the living matter. This irritation leads to a disturbance of the natural circula-

tion in the nourishing fluids of the tooth, which, together with the said irritation of the living matter, causes an enlargement of the contents of the canaliculi ; these enlargements forcing the lime-salts from their organized position, which in time becomes washed out by the acids before referred to. It will be remembered that some observers have taken this position, which I fully indorse : That the deeper portion of the disorganized tooth-substance contains no organisms whatever, nor any acids that can be found by the most delicate test.

This leads me to believe that there are but two essential theories in the process of the caries of the teeth :

1. Chemical. By the action of acids, fermentation causing decalcification of the inorganic portion of the teeth.

2. Pathological. By irritation and inflammatory action of the organic portion.

Micro-organisms only as secondary products.

Dr. Edward C. Kirk, Philadelphia. In view of the able remarks of Dr. Sabater just listened to, I feel that all has been said on the subject that I could possibly say.

Dr. W. H. Dwinelle, New York. I congratulate myself with the rest of you that I have another evidence of the superiority of our profession. I congratulate myself with you, gentlemen, that the microscope is our special property, that we adopted it early, and that the results that have proceeded from it in our hands have advanced the science of life generally. We have the advantage over the medical profession (and I say it with all modesty, of course) in this respect, that our science approaches an exact science. Medicine is continually changing ; remedies are continually changing and becoming ineffective. What is substantial and to the purpose to-day, to-morrow becomes inert and ineffective ; so that we approach the exact sciences, and in our day an independent science has arisen and become established,—the science of histology. Here we are exact as mathematics. We know, from the forms of disease displayed by the microscope, where we stand every time. The forms of diseased structures are exact in their expression every time. The form of cancer, and all other forms, are true and reliable in every instance. They appear under the same circumstances, cause and effect following every time, and the microscope displays them to us. I think we have had a very beautiful exemplification of it in the exceedingly interesting remarks that were made by my friend, Dr. Sabater. I rejoice that we have young men of his mark soon to fill our places. The science of histology has filled its place, and is as reliable as mathematics itself.

I represent in my relations to the profession perhaps a wider field than most of us represent ; or, in other words, my chronology goes back a little farther than most of you. I have been identified with the profession between fifty and sixty years, and have been an earnest and ardent worker and industrious student. And when I started in my professional career I had large hopes. I somewhat represent that wide space between the present and the past. I was contemporaneous with many in the profession whose names are almost traditional with you ; and with them, in starting out in my early career, I had large hopes, and they have been embodied from time to time in some humble efforts of my pen. And I want to say to you, gentlemen, that however large those hopes were, however large those anticipations, however earnest our prayers were for the right and for the truth and for science, they have been far more than realized. I feel that this occasion is a representative occasion. It is a matter of great congratulation to me that it is my privilege to see such intelligence displayed here. Where will we find more earnest work, more substantial results, than we are producing in our own special field of labor ?

I think the New Jersey Society is to be congratulated in many ways. I don't know that I ever attended a representative body where I found more of the elements that are calculated to dignify men and to insure progress and success than I find here. I found a particularly charming element that was manifested here last night under adverse circumstances. And I was reminded of a remark that I think a gentleman by the name of William Shakspeare once made, and that was this, "All's well that ends well." I don't say this in any spirit of detraction whatever, but whenever I see human nature struggling under adverse circumstances, my sympathy naturally goes out to them, and last night I was particularly sympathetic with our worthy President, as I found him under considerable difficulty. But I knew he would come out right and be sustained in his effort ; that the end would justify the course that he took, so long as he was founded in principle and in the right.

I did not intend to say but a word, but in brief I congratulate you that you have advanced so far. I congratulate you on the peace and harmony which exists, and the strong sense of right which governs you under all circumstances. The New Jersey Society takes the lead before most societies, before a great many, to say the least, in those particulars. They are an example to the cause, and I congratulate them and desire to express my hope that as they have begun so they will endure forever.

Nitrous Oxide Gas viewed from a Practical Standpoint.

BY JOHN D. THOMAS, D.D.S., PHILADELPHIA, PA.

I DESIRE to acknowledge the compliment paid me in the invitation to present a paper upon a subject of so much importance to the dental profession as nitrous oxide gas ; yet I respond with feelings of the greatest trepidation and reluctance, being borne down by a consciousness of my inability to present the subject in a way at all commensurate with its merits.

It has been my lot in life to have been connected with its use in an entirely practical way ; so, with your permission, I shall confine my paper to the consideration of the subject from this standpoint, leaving the questions of its physiological and pathological action for others to consider who make a special study of these departments of science.

It is now some twenty-eight years since nitrous oxide was introduced, or rather its use revived, by the efforts of Dr. Colton, for the purpose of extracting teeth, when, like every new thing, it had its way to make against opposition and prejudice in the profession and the suspicion and fear of the public. Like everything which possesses true merit, it grew from the first in popularity, and has continued to do so, until to-day it is regarded by everyone as the safest of all anesthetics, and pre-eminently the most desirable for dental purposes.

That nitrous oxide is a perfectly safe anesthetic—safe, I mean, from fatal consequences—seems hardly to admit of question, as is demonstrated by the testimony exhibited in the thousands, if not millions, of people to whom it has been successfully administered.

There is no record by which it can be accurately ascertained how many people have taken it since it was introduced in 1863 ; but the

latest, and probably most nearly correct, computation is that given by the late Dr. J. W. White in Dr. H. C. Wood's paper upon anesthesia, read before the Berlin Medical Congress in 1890, in which it is estimated that fully seven hundred and fifty thousand people annually inhale it in this country alone.

Dr. W. F. Litch, in an article upon anesthesia published in the "American System of Dentistry," has made a very careful and complete compilation of all the fatal cases attributed to nitrous oxide, and he there shows eleven cases of death; but in a recapitulation he eliminates four of them from the list as being in no way connected with the gas. Of the seven remaining, you will notice five of them occurred in Europe and but two in this country. If, as they say in stock speculation, we strike an average by dividing twenty-eight, the number of years in which nitrous oxide has been in use, by two, which would give fourteen, and multiply the annual number—750,000—by it, we would have 10,500,000 people who had taken the gas in this country, with but two deaths resulting therefrom. Of these, the first occurred in 1864,—within a year after the beginning of its use. It is said the patient recovered from the effects of the gas and walked into an adjoining room apparently well; he shortly returned and complained of shortness of breath, sank upon a sofa, and expired in a few moments. The coroner's verdict was that death was caused by congestion of the lungs, induced by the inhalation of nitrous oxide.

It is difficult to comprehend how the inhalation could have produced congestion of the lungs, as an after-affect to have caused immediate death; and I would be inclined to think it more from nervous depression and final heart-failure, which could have been from reaction rather than congestion. At all events, the explanation of the result seems hardly satisfactory in the light of our present knowledge, and the case is a doubtful one as attributed to the effects of the gas.

The second case is reported as follows: "In Chicago, October, 1871, a patient died under the influence of nitrous oxide, in the office of a dentist two or three days before the great fire which destroyed the most important part of the city. As a consequence of the confusion produced by that event, the fact of the death became known to but few persons, and was soon forgotten." Here, then, are two cases only, which at best are somewhat obscure, which can be produced in a record of a possible 10,500,000 administrations, after having been used by practitioners of all grades of experience and capability, from the young graduate just out of the clinic to the specialist who may have given it to thousands; from the most ignorant to

the most learned in the profession. This is why we can claim for nitrous oxide that it is the safest of all anesthetics, and yet I do not think anyone would presume to declare that there is no danger to be feared from its use ; on the contrary, there are serious forms of dangers in connection with its use which, as one becomes familiar with its effects, lead him to marvel that so many have escaped. Any agent which will produce unconsciousness in the strongest man within a minute, as nitrous oxide will do, we must admit is carrying him toward the point of final dissolution at a pretty rapid rate ; but fortunately the natural effects of the gas are accompanied by such distressing appearances that even the most inexperienced is made cognizant of approaching danger, and herein lies a principal element of the safety with which its use has been attended.

While from the foregoing facts you may agree with me that nitrous oxide is as nearly an absolutely safe anesthetic as would seem possible to obtain, it has not proven so perfectly satisfactory in other respects to the general practitioner. In our cities, extracting and using the gas have been in a large degree transferred to those who make that branch of dentistry a specialty ; and it is here where its great advantage to the dentist, as well as to his patient, is particularly demonstrated, but it nevertheless possesses great benefit in general practice.

To make the use of nitrous oxide perfectly successful, there are some factors which are absolutely necessary.

In the first place, the gas must be perfectly pure, and, if kept over water, must be fresh. The ammonia nitrate should always be tested before decomposition, and if there should be found the slightest trace of any chlorides it should be discarded. Although you may use wash-bottles for the purpose of eliminating the chlorine, experience shows that it will fail to do so, and the presence of chlorine in the gas will produce very grave depression of the heart's action, as well as general prostration. Care should also be taken to guard against the application of excessive heat in its manufacture. Gas made at too high a temperature will cause your patient to exhibit rapidly the signs of anesthesia, with highly accelerated heart-action and respiration ; yet the moment the operation is commenced he will manifest great mental excitement and become almost unmanageable in his struggles, followed with general lassitude from reaction ; and though no particularly alarming or serious symptom may appear, there is dissatisfaction to both your patient and yourself.

At the present time, however, the dentist is relieved of the cares of manufacture by being supplied from the dental depots with the gas

compressed in cylinders, which from the precautions taken in its preparation ought to be free from impurities.

The inhaling apparatus should be as simple in its construction as possible, with openings sufficiently large to permit the patient to breathe with no more exertion than is required in natural respiration. In my own practice we use a large inhaler made of vulcanized rubber, with flexible valves made of rubber-dam. It is necessary to use props to keep the jaws apart. During complete anesthesia the muscular system becomes more or less rigid, and, unless the prop is used, the time necessary for the operation is lost while endeavoring to force the mouth open.

It is desirable also that the chair used for extracting with the gas should have the footstool detached. Patients are sometimes restless, and any movement of the legs or feet upon a stationary footstool will be felt upon the head and upper part of the body, resulting in great interference with the operation. With the stool separate and on casters, it is readily pushed away and the head kept in repose.

With pure gas and a perfect inhaler, together with the foregoing precautions, one is well equipped for a successful administration.

For extracting, it is desirable that the forceps should be so constructed that the operator may stand in one position, and make one pair do as much as possible; in this way six or seven pairs will be found sufficient for all ordinary purposes. The beaks should be well sharpened, so there will be no slipping; serrated points and beaks, except in the molar pairs, are of little use in extracting with the gas. You want your forceps so that it will not be necessary to make a second effort upon one tooth.

With these essentials, together with a proper amount of experience in its management, nitrous oxide will justify its claim to being the best anesthetic for dentists' use, for under such conditions you can put your patient to sleep, perform the operation, and have him return to consciousness inside of from one minute and ten to one minute and fifty seconds; and during this interval, with conditions favorable, the patient will pass into what is to him a pleasant sleep without the least excitement or resistance, and awaken delighted with the result, sometimes declaring he was not cognizant of a moment's unconsciousness, and wondering when and how the tooth could have been extracted without his knowledge. During this short period the operator will have had time to extract from one to twelve, fifteen, or eighteen teeth, according to the character of the teeth and his own dexterity.

Your essayist recently took from a lady, in the presence of her dentist

and her family physician, the whole number of the thirty-two teeth ; of these the upper sixth-year molars were decayed to the bifurcations, which necessitated the removal of each of the six roots separately, making the operation equal to thirty-six extractions, while the patient remained unconscious of a single tooth having been taken from her mouth. This case is not cited to claim any superiority in skill or dexterity, but to illustrate what can be accomplished by adopting a system which will enable one to perform as much as possible in the shortest space of time.

I have said these results will appear when conditions are favorable, by which I mean, besides the essentials of pure gas, etc., you must have a patient of good health, whose circulation and respiration are in a condition of normal equilibrium. Under such circumstances the results may nearly always be counted upon as proving satisfactory to both the operator and the patient, and such will appear in the great majority of cases.

While the foregoing is true, it may also occur that some cases may be met in which the results are not entirely satisfactory even to the most experienced operators, or at least require the greatest amount of effort and care to make them so to the patient. The idiosyncrasies of different people are as varied as are the temperaments of the individuals.

The most common of the disagreeable cases are those of overwrought nervous organizations, who, from trepidation in anticipation of the operation, will be under great excitement, but at the same time keep themselves under splendid control until they are recovering, when they will give way unconsciously to more or less violent crying and lamentations ; particularly is this the case if the patient has recently been the subject of family bereavement. Others, again, will make such an exhibition just at the point of unconsciousness, and continue until anesthesia is thoroughly produced, when they will become quiet, and remain so until the same point is reached toward recovery. These cases require care to prevent stoppage of respiration by allowing the blood or saliva to flow into the larynx during the paroxysm, otherwise they need cause no anxiety, and they will afterward express satisfaction with having been relieved of the pain of the operation, and soon forget that which was disagreeable.

Besides these, you may meet men upon whom the effects produced will be in keeping with their habits of life ; for instance, a policeman may imagine he is about to arrest a desperate character, and will probably mistake the operator for the villain. A trainer of trotting horses may think he is driving his pet horse at a high rate of speed ;

or you may meet a man of a quarrelsome disposition, and if he be one addicted to the whisky habit, he will be all the more difficult to manage ; but they are all easy of control. The excitement lasts but a few seconds, and you want to be prepared to hold them firmly in the chair until they are reasonable, and under no circumstances allow them to get away from you. The explanation of these phenomena is easily found when we understand how the gas generally produces its effect upon the nervous system.

Dr. Arthur S. Underwood, of London, very aptly illustrates the progressive action of the gas when he says in his notes upon anesthesia that it paralyzes the nerve-centers in a certain order, as follows :

1. The cerebrum, destroying volition so that action is no longer designed or controlled by the intelligence of the individual.
2. The sensory centers of the cord, after which movement is erratic and not even responsive to the sensory stimulus.
3. The motor centers of the cord, after which movement ceases ; and lastly, the sensory and motor centers of the medulla, after which respiration, the heart's action, and all the functions of life cease.

Anyone familiar with the progressive effects of the gas will readily recognize the correctness of the foregoing divisions, which explain the phenomena referred to in the cases cited. Take cases of exhibition of grief. The sensory and motor action of the cord being impressed by the weight of mental anxiety from fear of the operation and grief, will give way independent of volition ; so also in the cases of the policeman, the trainer, and the fighter. In this condition of cerebral paralysis, while the spinal cord may yet be in its normal state, the reflex impression will cause the patient to cry out and give every indication of suffering pain when the operator begins too soon or continues too long, and yet upon recovery from the effects of the gas he will declare that he was unconscious of anything.

I could relate numerous instances of this condition, but will only mention one, of a servant girl who was to have the two superior wisdom-teeth extracted. After one was removed and the prop taken away, the mouth closed so tightly that it was impossible to get at the other tooth. My assistant commanded her in a loud tone to "open her mouth," which she immediately did, and the tooth was extracted. Upon her recovery she asserted that she knew nothing of the command or the extraction. The sensory and motor nerves were not at that time affected by the gas, while the cerebrum was. With these points in view many of the disagreeable features may be averted, if care be taken not to begin too soon or to continue too long.

These cases constitute the great majority of all that one has to operate for in a general practice which are likely to cause annoyance ; but with them all the question of danger can be largely left out of consideration, for with proper care to protect them from accident nothing more serious than the hysterical excitement will occur.

You will, however, occasionally meet a case which will cause you great anxiety, beside exercising your energy to its utmost to bring about a recovery. Fortunately these occurrences are very rare, and as you gain in experience you can make them more and more so.

These conditions are exhibited in cases of constriction of the glottis, or swallowing of the tongue, as it is sometimes called ; suspension of breathing ; convulsions ; heart-depression ; and a prolonged narcosis, similar in its expressions to laudanum-poisoning. Of these, the first two are, I think, produced by and dependent upon the condition of asphyxia, which I will refer to again, which accompanies the inhalation of the gas.

In cases of constriction of the glottis or swallowing of the tongue, the patient presents an appearance of endeavoring to breathe with violent effort from the diaphragm and chest-muscles, while the passage of air to the larynx is prevented by complete closure. He will become very dark in the face, with eyes protruding, and show signs of rapid strangulation, accompanied with extreme rigidity of the whole muscular system, which adds to the difficulty. This stoppage may be effected by a spasmodic contraction of the palatal and hypoglossi muscles,—drawing the palate closely to the base of the tongue, which is also well drawn toward the throat. This condition is not necessarily alarming, for by pulling the tongue well forward air will pass readily to the lungs and recovery rapidly follow.

The serious cases, however, are those where the contraction includes the whole pharyngeal space about and above the larynx, drawing the tissues over the glottis so tightly that to produce a passage for air seems almost impossible. The remedy is to pull the tongue well out of the mouth with a dry napkin if possible ; or with a tenaculum or tongue-forceps, being sure that the back part of the mouth is free from blood and saliva, then with the fingers upon the roof of the mouth lift the head as though you would raise the whole body. This motion will produce the effect of stretching the neck, and is usually sufficient for relief. In the one case in my experience where this was not effectual, relief was obtained by placing the first and second fingers far down the throat and separating them opposite the glottis. After you have succeeded in admitting air to the lungs, say two or three breaths, the

blood assumes its red color, the constriction is relieved ; and if you are strong-nerved and sufficiently composed you can proceed with your operation, and have ample time to complete it before recovery, at which time your patient will have no knowledge of anything having been done or of the precarious position he has been in ; and what is to me the most astonishing thing about it, he seldom feels any ill effects from his strangulation further than, perhaps, a heaviness about the head and a soreness about the throat the next day.

These are cases which will occur less frequently as one becomes familiar with the use and effects of the gas, and yet the peculiarities are such that it would be impossible to describe them so as to enable a novice to avoid them. From experience, one grows to recognize in people idiosyncrasies which are indescribable. I have gone from my office and met people a square away and turned to follow them directly to the house, recognizing the peculiar expression of supplicating timidity, combined with anxiety and suffering. So one can become familiar with the appearance of people in which the different exhibitions of the gas may take place. I have noticed that the men in which the effect occurs (I have never noticed it in a woman) are of medium build, with light florid complexion, exceedingly red lips and mucous surfaces, rims of the eyelids more or less congested, and small or receding chin. These persons show markedly the oxygen starvation which accompanies the inhalation of the gas, and exhibit the muscular contraction and convulsive action very readily.

The second class of cases which exhibits elements of danger is that of suspension of breathing. By this I do not mean the hysterical strain in people who recover with violent crying,—this is more noticeable in children, but seldom goes to a point to excite anxiety,—but the suspension of breathing from physiological causes. Of these, three kinds are recognizable :

The first will take place immediately upon loss of consciousness, and is a repetition of the effects described before, where the patient, while volition lasts, has been persuaded against his will to continue breathing the gas. The sensory and motor ganglia, being as yet unaffected, will afterward carry out the feeling of resistance by a sort of mentality of their own, and breathing will cease ; sometimes this persistence will continue so as almost to produce suffocation. On removing the mouth-piece and pressing a finger against the fauces he will resume respiration with a gasp, and you can proceed with the administration.

The second kind consists of those who exert themselves to breathe

immoderately deeply and rapidly, so that when the action of the lungs is no longer controlled by volition breathing will cease from fatigue and rest follow involuntarily for several seconds, sometimes requiring considerable effort to bring about a resumption of the normal action. In both of these cases it is important to recognize early the cause and effect, and to apply the proper remedy promptly, remembering that while respiration is suspended the anesthetic effects are continually increasing, particularly that phase which is produced by what is known as the want of oxidation.

The third state of suspension is produced legitimately by the physiological effects of the gas, and its accompanying asphyxia directly upon the nerves which control the action of the diaphragm and lungs. To my mind this condition is caused more by the apparent asphyxia, or want of oxygen, than by the actual effect of the gas. Of course, an excessive dose of the gas might produce this effect, as it has been reported in most of the cases of death in animals that the lungs ceased their action before the heart ceased beating; but in the cases to which I refer there will be no indication of an overdose; in fact, it will sometimes take place before the patient is sufficiently under the influence of the gas to permit of operating.

The appearances presented by persons in whom this phenomenon is likely to take place are sufficiently clear to excite suspicion and to put one on guard, and with these premonitory indications it is usually an easy matter to avoid the point of danger. This suspicion may be aroused by persons of dark-colored blood, as shown at the lips, and you will notice that such people take very slow and shallow inspirations naturally, showing that their blood appears already heavily charged with carbonic acid; or rather they do not breathe a sufficient amount of oxygen to relieve the blood of its accumulated carbon, and at the first inhalation the dark appearance begins to deepen. They will be in apparently good health, and as far as the lungs are concerned may be entirely free from disease, but are seemingly particularly weak in their breathing function, which will sometimes be as low as twelve or fourteen respirations to the minute. As the effects of the gas progress, the discoloration increases, the breathing grows slower and less deep, and, should you continue the administration, would cease entirely. By a wise dispensation, the admission of atmospheric air to the lungs is the great antidote for the ill effects produced by the gas in these especial cases, so if one grows sufficiently familiar with the indications preceding this effect and admits the air soon enough, respiration will be resumed and no bad result will occur.

Should the respiration cease, then every effort should be made by artificial means to restore it as quickly as possible, remembering that the condition of deoxidation is in a great measure responsible for the effect ; and the heart's action still going on, every second lost adds so much more to the depth of the impression on the nerves already paralyzed.

Several methods of artificial respiration have been recommended. The idea, of course, is to get air to the lungs with as little loss of time in preparation as you can, and before resorting to other methods. I would suggest that (your patient sitting in the chair with his feet resting on the footstool) you press the body forward until the chin will come as near the knees as possible. This motion will force the abdominal viscera toward the lungs, thereby emptying them of the gas ; then raise the body to the perpendicular position—keeping the tongue well forward in the mean time—and lift the head and arms, which will tend to inflation ; then again pressing forward to the knees, repeating until the blood begins to assume a red color, when the diaphragm will take up its natural action and recovery will be speedy and complete.

I have said that to my mind these effects are produced more by the accompanying deoxidation of the blood than by the direct effects of the gas ; and it is of interest that we should discuss just what the effects of the gas are and how produced.

There have been different theories upon the subject. First, it was thought to produce anesthesia by overoxidation, because of its containing another equivalent of oxygen as compared with atmospheric air ; but it has been shown that it goes into the lungs nitrous oxide and comes out the same, with a decreasing amount of carbonic acid, showing that no separation of the oxygen from the nitrogen takes place. A later theory assumed that the gas possessed no anesthetic properties in itself, but its effects were produced solely by the condition known as the want of oxidation, or deoxidation of the blood.

If such were the case, any agent which would cut off the oxygen supply would produce the same effect ; but there is nothing known that will produce a similar result in the like space of time. Probably the most nearly correct theory is, that we have a dual effect produced : one by the gas, which is as pure and legitimate an anesthetic or narcotic as any now known, and we have the accompanying effect of deoxidation, which helps to produce the anesthesia, but which is responsible for the disagreeable symptoms such as the asphyxiating appearance, violent twitching, and convulsive muscular contraction.

If we could eliminate that which produces this condition, we would, I think, have all that could be desired in an anesthetic for dental use.

To meet this great desire, it has been suggested that the gas should be mixed with pure oxygen, or diluted with atmospheric air, but I have never learned that these efforts have proven satisfactory.

It is not admissible to previously dilute the gas with air, for the reason that you meet patients of such diverse constitutions that some will fail to come under its influence at all. There are some men who can drink an inordinate amount of whisky with impunity, while others are easily affected with half the amount or less ; so you will find it with the gas ; some will require a greater quantity than others, and if it is diluted with air complete narcosis is utterly impossible.

However, the evil effects of the lack of oxygen can be mitigated very perceptibly by allowing a small amount of atmospheric air to pass through the nose and between the lips when the inhalation is about half completed ; not enough to counteract the effects of the gas, but just sufficient to supply a little oxygen to relieve the intensity of the discoloration, and herein lies the secret of avoiding the dangerous symptoms which I have endeavored to describe in the constricted glottis and suspended breathing. By so doing I have frequently administered the gas in this way to the same patients without the least inclination to contraction or stoppage of respiration. In long operations, where the patient has been under the influence from three to eight or nine minutes, alternating a breath or two of the gas with one of air, there has been but the least discoloration imaginable, and none of the stertor and severe twitching which were shown where the pure gas was given. It is the knowledge of this fact which leads me to condemn the use of the hood or face-piece so much in vogue in Europe, and which I am sorry to see is recommended in this country. You want full view of the lips, so that you may see to what extent discoloration is taking place, which with the mouth-piece and face uncovered can be relieved to a great extent, and that, too, without prolonging the period of inhalation more than a breath or two.

Convulsions will sometimes occur in young persons subject to epilepsy, and it is well to refuse to administer it to those who are liable to frequent attacks, although that fact does not render it certain that such an effect will be produced. In one case in my own experience the young man was sixteen years of age, and had been subject to these fits about every four or five weeks, and it had been just four weeks since his last attack when I successfully gave him the gas. Another case was a boy fourteen years old, who had never had an

attack since his fifth year, before which time he was seriously affected by them, and I have never learned that he has had any since ; and yet we have given the gas to probably hundreds who were thus afflicted who in no way exhibited the least sign of anything of the kind.

There is little that you can do in the treatment other than to try and prevent deoxidation of the blood as much as possible, and relieve that which is present by placing the patient upon the floor, resorting to means for producing artificial respiration, and waiting until the spasm is relaxed and breathing is voluntarily resumed. After he has recovered he will feel the usual dullness of intellect, which gradually passes away, and a disposition to sleep, which is permissible.

We have another exhibition which I have spoken of as extended narcosis, resembling laudanum-poisoning. These are cases of hysterical subjects who have catalepsy in addition, and I suppose the condition might be considered perhaps more properly a severe cataleptic fit, produced by the gas, except that it is an effect produced upon the cerebro-spinal system by the action of an agent which is narcotic, and the cataleptic rigidity is wanting. I suppose in the use of any anesthetic or opiate the result would be the same.

No unusual symptom is noticeable during the inhalation, nor until recovery should be looked for ; the blood resumes its natural color, and the heart's action appears to be normal, but respiration will be at this time slightly enfeebled ; the muscular system will be perfectly relaxed, and yet unconsciousness remains. If the patient is undisturbed, respiration gradually becomes slower until it ceases altogether, and I believe life would gradually ebb away. In one case of this kind which occurred in my hands the lady's physician was present, and thought he recognized the attack of catalepsy which he had frequently seen before, and expressed no concern even when suspension of breathing took place, as he remarked that patients of this particular temperament were not apt to hold their breath to the point of suffocation ; but in this instance it continued until the heart showed signs of marked depression, and it required our most strenuous efforts for her resuscitation. The remedies employed were artificial respiration, strong ammonia to the nose, and mustard plaster over the cardiac region. When she had recovered sufficiently to swallow, a generous dose of valerian with three or four drops of laudanum was administered internally, and later the circulation was further assisted by walking, and by rubbing the hands. The resemblance to laudanum-poisoning was recognized when consciousness was partly restored, by the patient resisting every effort made for her relief, and begging to be let alone so that she could go to sleep.

The success attending these cases depends upon the early recognition of the situation, and the promptness with which one employs the measures for their speedy restoration. Fortunately, these occurrences are very rare, as are also the three preceding forms of danger which I have endeavored to describe ; but that they are likely to and do take place is demonstrated by the experience of those who have extensively used the gas, and they constitute to my mind the four classes of dangerous effects in which, should a death occur, no other verdict than "death from the inhalation of nitrous oxide" could be rendered.

I have seen perhaps a dozen cases of constriction of the glottis, nearly a score of suspension of the breathing function, four convulsions, and five or six cataleptic cases. As one gains in experience, he is enabled to avoid almost entirely these risks by the knowledge he has acquired, which causes him first to anticipate the danger, and secondly, being familiar with the indications, avoiding it, as in the cases of constriction and suspension, by admitting a small portion of air to prevent deoxidation ; and in convulsions and prolonged narcosis using great care not to anesthetize the patient further than is just necessary for the purpose. It is better to do less than is desired in instances of this kind, so as not to produce the impression of profound anesthesia.

Other cases requiring special care are persons of large physique and plethoric habit ; persons whose vital force is below par from overwork and worry, or from the effects of the late epidemic la grippe ; intemperate people ; consumptives ; and persons whose heart's action is weak without exhibiting any organic lesion.

In the plethoric habit, the appearance of deoxidation is so marked that it is impossible to carry these patients to the profound anesthetic state you would otherwise do for fear of actual asphyxia, and when you operate in the partial state of anesthesia—that is, when the cerebrum is paralyzed and the sensory and motor ganglia not—the involuntary resistance to the operation is such that an arterial rupture is possible.

In people whose vital force is below par, we must bear in mind that we are depressing a nervous system whose recuperative power is confined to the amount of strength the individual may possess. In such cases, a little sherry wine given as a gentle stimulant immediately before administering the gas is desirable.

Persons at all under the influence of liquor should be refused, not from the fear of danger, but to avoid annoyance, for a nervous system partially narcotized from whisky will become pretty thoroughly so if the effects of the gas or any anesthetic be added.

Consumptives require great care, for the reason that the aerating

surface of the lungs is so impaired by disease that the anesthesia progresses for some seconds after the discontinuance of the inhalation ; so that in some cases it is necessary to remove the mouth-piece at the moment of unconsciousness or immediately before, and wait until the full force of the gas has been spent before operating.

In cases of weak heart-action the greatest amount of care is needed ; as much perhaps in judging when it should be given or whether it should be given at all, as in the administration. In speaking of the weak heart, I do not mean one affected by the different phases of organic disease to which the heart is liable, but where no lesion can be detected, and, indeed, the patient may even be unaware of any functional disturbance.

It is generally conceded that in cases of heart-disease where the patient is in comparatively good health there is less risk attending the administration than doing without it ; so it is a matter upon which each operator must decide by his own judgment as to whether the patient would suffer more from the gas than from shock if operated upon without it. But in cases of debilitated heart the administration seems to be attended with some risk, and it has been a matter of great interest to me to understand just what effect is here produced. The patient will seldom exhibit signs of syncope while under the gas, so it is fair to presume that it has not had a depressing effect, and yet when recovering, or shortly after, a feeling of faintness seizes him. In some people who are subject to fainting at the sight of blood this may be expected at this time, but the cases to which I refer were probably never known to faint. This effect is usually seen in patients mostly of fleshy build and of sallow complexion, indicating liver-congestion and consequently vitiated blood. I have seen blood in some patients almost of the consistency of cream in these cases. Under such circumstances the heart is under great exertion at all times to propel the circulation, but particularly so under the nervous excitement from the anticipation of having a tooth extracted, when the pulsations will run up to one hundred and twenty or one hundred and thirty. After the exciting stimulus is removed the heart will fall much below the normal beat, which to my mind seems to be the expression of a demand for a period of rest, and is independent of any physiological effect of the gas. In such cases it is better to administer a light stimulant, and let the patient wait until he becomes more quiet and composed, when the gas may be given and the operation performed with this effect greatly mitigated if not entirely obviated.

In the event of a death taking place, under the circumstances I do

not think it could be charged upon the effect of the gas, as from a physiological standpoint the anesthesia has left the nerves of the heart untouched, and the verdict would necessarily be that it was heart-failure caused by debility and excitement, or perhaps shock.

It will never cease to be a matter of wonderment, when we contemplate the thousands who take the gas while they may be unconsciously suffering from some form of heart or other affection, and consider the great nervous tension they labor under both by suffering and loss of rest in addition to the fear of the operation, that cases of death do not frequently occur from tooth-extraction even without taking the gas, for we have numerous instances where sudden fatalities have taken place,—notably Secretary Windom after finishing his post-prandial speech in New York, and the Rev. Dr. Breckinridge at the close of his argument upon the Dr. Briggs case in the Presbyterian Assembly at Detroit. These are happenings which are constantly recurring in every-day life, and there is nothing by which such a condition could be recognized as a warning against administering the gas ; so I repeat that it is a most wonderful thing that such occurrences are not frequent in the dental office.

Now, gentlemen, I have endeavored, though I feel very imperfectly, to describe the principal features of interest in the administration of nitrous oxide gas. I have been compelled to omit much detail for fear of wearying you, and I submit the matter for your discussion.

DISCUSSION.

J. A. Osmun, M.D.S., Newark, N. J. The paper just read is one of the most instructive and comprehensive to which it has been my good fortune to have listened, and we are to be congratulated that we have had this subject so cleverly presented to us. The subject and its manner of presentation brings us face to face with the most important operation within the domain of dentistry, and shows most conclusively that it is no child's play to properly comprehend all the dangers that lurk around this apparently easy operation.

The doctor has gone into the practical issues and methods of procedure so thoroughly from a clinical point of view that there is little to add, except in the way of commendation and emphasis. However, there are other questions of importance involved, and it may be profitable to look at this subject from another standpoint in order that the fullest light may be thrown upon it.

Some of the experiences quoted are to a greater or less extent familiar to each one of us who has had any extended experience in the

use of this agent. I do not wonder, therefore, that the speaker expresses surprise that so few fatal cases have resulted from its indiscriminate administration. The statement so often made, and by dentists as well as by those not familiar with its manifestations, that nitrous oxide is a perfectly safe anesthetic, should be modified to some extent, as I doubt not nearly all present will indorse. Once let the idea prevail that nitrous oxide is a *perfectly safe* anesthetic, and there will be less precaution taken than there is now, and Heaven knows that there is enough carelessness in its use at the present time.

The point is well presented, that any agent capable of producing unconsciousness and insensibility in a strong man within so short a period calls for caution, judgment, and a knowledge of no mean order ; and when we take in the full significance of the condition of complete anesthesia, of the grave and frightful condition in which the patient is placed, with more than half of his vitality suspended, and the boundary line between life and death narrowed to such a near approach, coupled with the startling fact that in the hands and to the knowledge, the fidelity, and the skill of the administrator rests to a very great extent the issues, it is difficult to overestimate the importance of this subject.

The fact so ably presented, and supported by the figures, to the effect that nitrous oxide is the safest anesthetic now known to us, is undoubtedly true ; yet there have been some deaths recorded that cannot be explained away on any other basis than that they were caused by the inhalation of nitrous oxide. Then, again, many serious charges have been brought against it by persons who have inhaled it for the purpose of having teeth extracted, and who date from such a time a condition of ill health. This does not imply that it was improperly administered, nor can it be charged to a mere coincidence. There must be some foundation for the statement so often repeated.

We recognize the fact that there is a wonderful difference in the susceptibilities of different persons, as well as a difference in their recuperative powers, and also the fact that the same person will exhibit at different periods of life various degrees of vitality. All this needs to be impressed upon our minds frequently, and to be remembered when diagnosing a case for the use of this agent.

The essayist has directed our attention to the importance of being thoroughly equipped with inhaling apparatus of simple construction, gas of known purity, etc., and all other necessary adjuncts at hand, and then adds, "With a patient of good health, normal circulatory and respiratory organs, one can expect happy results." But unfortunately all are not of this order, as is so ably shown by the writer. This fact

suggests the thought, How much of a preliminary examination must be made to ascertain these facts?

The essayist has touched to a limited extent upon the supposed verdict in a case of death in some of the cases submitted for your consideration. This opens up a wide field for investigation and thought, and it cannot be well ignored by anyone who assumes the responsibility of administering an anesthetic.

I do not believe that as yet in the eyes of the law dentistry has been recognized as a specialty of medicine. If I am right in this position, then when a dentist assumes the responsibility of administering an anesthetic he must use all the precautions that would be expected to have been used by the medical man,—first, in diagnosis; second, care of the patient while under the influence of the anesthetic; third, the means used for resuscitations in case of unfavorable results ensuing; and at this point each would stand upon equal footing and be amenable to the same law. I leave with you this thought as to the necessity for the precautions I have indicated.

I will cite, with your permission, a part of a charge lately made to a jury in New York in reference to this subject: "As an anesthetic deprives a patient of the control of his faculties and renders him unable to take any precautions or make any effort for his own safety, the physician or surgeon administering it must exercise the highest professional skill and diligence to avoid every possible danger. The professional man, no matter how skillful, who leaves an essential link wanting or danger unguarded in such treatment, is chargeable with negligence and answerable for any resulting ill consequences."

This charge places us in a position that cannot be very well evaded, and points out very clearly to our mind that we are expected to know something of the previous physical history of our patient before administering this agent; and while I do not ignore the fact that the experience of the operator can see and take into account many things at a glance that will enable him to arrive at a very accurate diagnosis, I also do not forget the fact that there is an adage which reads something like this: "Familiarity breeds contempt," and the importance of the previous examination of the colleges should make this a feature of great importance.

However, the question of unskillful treatment of a patient is one not easily determined; but it seems to be a settled principle in law, that a reasonable degree of skill must be shown, and everyone who enters into a profession undertakes, in so doing, to bring to the exercise of it such knowledge. Enough along this line.

After listening to the various cases cited, of which we are all to a greater or less degree familiar, and which we can substantiate from our own experience, we can only regret that so little is known positively of its real action upon the human economy. The therapeutic value of this agent has only been recently recognized, but in many instances physicians who have made the acquaintance of this gas have found it of value in many disorders, notably those of nervous and respiratory diseases. I have administered it with the happiest results to patients who were suffering from asthma. For insomnia it has been recommended by high medical authority, and it has been also highly urged as a therapeutic agent of great value in hysteria and melancholia.

The doctor has given us the details of the various means and methods he uses in cases of resuscitations, and there is but little to add. However, he did not mention the use of the hypodermic syringe, and the insertion under the skin of equal parts of brandy and ammonia; this is always my sheet-anchor of hope. I never administer the gas without looking at my hypodermic syringe to see if it is in good working order; it acts like magic, stimulating the heart's action and the respiration. I should like to commend this practice to you.

The paper is so full of good things, that it is only possible to touch upon a point here and there.

The experiences related, the suggestions offered, all tend to emphasize the fact that in the administration of nitrous oxide we assume a serious responsibility, and in order to measure up to the requirements we must study the question carefully, diagnose critically, exercise great care during the period of insensibility, be fertile in resources at dangerous places, and always have the third person present. I will not trespass longer upon your time; I realize how inadequate these thoughts are compared to the importance of the paper.

I can only add my personal thanks for all the many valuable suggestions I have gotten from our Philadelphia friend.

Professor S. H. Guilford, D.D.S., Philadelphia. I think I am only paying a deserved compliment to our friend Dr. Thomas when I say this is the best paper on nitrous oxide I have ever listened to or read.

The use of nitrous oxide gas has taken a firm hold upon the affections of the dental profession. It has done so because of its many advantages. There are some things connected with it that, I think, will bear repeating and keeping in mind.

First of all, in regard to its discovery and introduction. About the time that our forefathers were striking for their liberty, and in the very year, and possibly about the very time that they were framing the Declaration of Independence, nitrous oxide gas was first discovered in his New England laboratory by Dr. Joseph Priestley, in 1776. About the beginning of our present century, Sir Humphry Davy first suggested the possibility of its possessing anesthetic properties. About fifty years ago, Dr. Horace Wells, of Kentucky, was the first to practically demonstrate that it did possess anesthetic properties; and though Dr. Priestley was not an American, he was an adopted citizen of America, and remained here until his death. Sir Humphry Davy was an Englishman, but Dr. Wells was American born; so that of the important facts connected with the early history of nitrous oxide, we, as Americans, can lay claim to the first discovery of the gas and the first practical application of it.

Another point to be considered is its relation to the ordinary atmospheric air. Both these substances, nitrous oxide gas and atmospheric air, are composed of nitrogen and oxygen, atmospheric air consisting of four parts nitrogen and one part oxygen, and nitrous oxide gas of one part nitrogen and two parts oxygen. In air we have nitrogen and oxygen simply mixed, with no chemical union whatever; whereas in nitrous oxide gas we have an absolute chemical combination, and we cannot, under ordinary circumstances, separate the two. So that while we breathe the air which contains a certain proportion of oxygen, that oxygen is taken up by the blood in the lungs and carried through the system and does its proper work. When we breathe into our lungs nitrous oxide gas, it is carried into the system as nitrous oxide gas, and is eliminated as such. The two elements are not separated at all. In early days it was noticed when gas was given from an ordinary gas-bag and inhaler, that when the inhalation was continued for a little while the eyelids and lips of the patient became peculiarly purple and the face assumed a singular color. That of course indicated a certain amount of danger. And it showed that the cells in the lungs were being filled with a substance that prevented the admission of oxygen. It was reasoned that it must produce its effect in one of two ways,—that it was filling the lungs to the exclusion of atmospheric oxygen, or else producing an effect upon the brain. It was supposed that as nitrous oxide gas contained an excess of oxygen over atmospheric air, it stimulated the brain; but when it was found out that it passed off as nitrous oxide, not losing any of its oxygen, that idea had to be abandoned.

Nitrous oxide acts as a powerful stimulant, and when the system is exhilarated beyond the feeling of pain it naturally produces an effect somewhat similar to hysterics.

In early days the gas was made by the dentist himself. There was great ignorance upon the subject, and there were many cases that were serious in their aspects. And it is not to be wondered at under the circumstances that a certain number of cases should be found where death occurred. The only wonder is that death did not occur oftener. Only a certain change in the amount of heat required will form another gas which is poisonous and deadly. No doubt that gas was often formed mixed with the nitrous oxide. But as we came to better understand how to make it, the unpleasant results grew regularly less, and to-day, where the gas is manufactured pure and in large quantities under careful supervision, and is compressed into bottles that can be carried anywhere, there has not been a record of a single death that I have anywhere been able to find since we have had it in its liquefied form, showing very plainly, I think, that where the gas is properly made, and where it is pure, there is scarcely any danger. When you consider that the gas was made by the dentist himself, that it was administered almost indiscriminately without regard to the patient's condition, can you help wondering that more serious results did not follow?

Now that it has been used so often, and under so many circumstances with comparative safety, I think dentists are likely to become careless. They have secured such immunity from serious results that they may feel that the administering of gas is a perfectly safe thing. But as the essayist said, there is no absolute safety. Any change from ordinary conditions in life is dangerous. We cannot take a patient and change his condition of life, bringing him to a state of unconsciousness, to that narrow line that separates life from death, without running considerable risk. And it is for this reason that persons who give the gas, even though they perfectly know how, and it is perfectly pure, should never undertake to administer it without having at hand those remedies which will counteract serious effects. And in addition we should understand how to make use of the different methods of artificial respiration, because many patients would have died but for the application of this knowledge.

Another thing the essayist did not speak of. That is the mixing of nitrous oxide gas with other anesthetic agents. In this country dentists found that in a great many cases its effects did not last long enough to fully satisfy them. Under those circumstances, and not

feeling that they wanted to risk the use of ether or chloroform, they cast about for some method by which they could prolong the anesthetic state after having administered the gas, and it led to the combination of the gas with some of the more lasting anesthetic agents. The difficulty is, what means should we resort to to counteract the possible ill effects of such a combination? Shall we apply the remedies of nitrous oxide, or of ether, or of chloroform, etc.?

In this way, I think, we would be liable in case accident occurred to be brought into court, and when questioned, if obliged to confess that we used a preparation like Vail's vapor, for example, and did not know what it was composed of, our confession that we used a combination of anesthetics would be apt to cause the case go against us. Combined anesthetics have been given successfully in this country, and I notice by the English journals that they are being used in England. At the same time I agree with the essayist that nitrous oxide gas, pure and simple, answers all the purposes of the dentist so far as the extraction of teeth is concerned.

Dr. C. Huestis, Dakota. I would like to ask Dr. Guilford one question. If I understood him, he said that the gas was eliminated from the lungs having the same chemical properties that it possessed when it was inhaled. If that is so, what becomes of the carbonic acid gas in the mean time?

Dr. Guilford. We know that it is present and doing its work, from the change of color in the face. That color passes off, so that which caused it has passed away as the carbonic acid gas.

Dr. W. A. Conrad, St. Louis. The paper upon nitrous oxide gas was a strictly scientific paper, and one of more than ordinary interest. Judging from the fact that the subject has been presented to you in such an eloquent manner, and from the fact that none of the gentlemen wish to take part in the discussion, I should say that these are two societies of gas-givers. They must certainly indorse gas-giving, and for one I would like to place myself upon record as being opposed to the use of it. In the first place, Mr. President, the use of nitrous oxide is, without question, dangerous. None of the gentlemen who have presented the subject have said the contrary. It is the most desirable of all anesthetics for dentists, but they all say it is dangerous, and for that reason I am opposed to it.

But I am opposed to it for other reasons. It places in the hands of a certain class of men an opportunity of attracting business, and doing a great deal of harm to the public, and for that reason we, as dentists, should oppose it. We have also dangers in the adminis-

tration of nitrous oxide gas other than that of death. For a number of years I administered nitrous oxide gas to the general public and also for the benefit of dentists, and I am ashamed of it, for during these five, six, or seven years of my life thousands of teeth were lost that should never have been lost. The essayist says in his remarks that it has been administered thousands of times,—seven hundred and fifty thousand times; only seven hundred and fifty thousand people, but how many teeth does that represent? He goes on and says you can extract from one to fifteen or eighteen teeth at one administration. What does that mean? Does any dentist who practices what we call operative dentistry ever find it necessary to extract that many teeth from one mouth at one time? I am sorry to see the subject assume these proportions. I am sorry to see the New Jersey State Dental Society sit here and say nothing on such a subject as this. I am from the far West, and we do not believe in extracting teeth there. Indeed, when it is necessary to take out teeth, where you have the perfect confidence of the patient, they can be extracted with safety without an anesthetic. There is no danger from nervous shock. There is more danger from nervous shock when an anesthetic of any kind is given. Also, as the result of an experience of five, six, or seven years, I have in mind quite a number of cases in which I firmly believe, as an honest man, that the nervous system of those patients was permanently impaired by the administration of the nitrous oxide.

I am sorry to see that two great societies, having in their membership gentlemen who are intelligent, successful practitioners of dentistry, would allow a paper of this kind to pass without protest.

Dr. Thomas. It gives me great pleasure to hear from the far West in the manner of the gentleman who has just spoken. Possibly they do not have as many teeth to extract there as we do in the East,—probably the population is not so great as it is here. It is, however, pleasant to hear now that there are no teeth which need to be extracted, that they save every tooth. If you take into consideration that in this section of the country there are but about twelve per cent. of the people who go to dentists at all, what are you going to do with the remainder that suffer toothache? It is all folly for a man to assume such a position in the present day. I shall be just as glad as any gentleman here when there shall be no teeth to extract. In my practice I do take out teeth that ought to be saved. I won't do it if the patient will have them saved. According to the gentleman's own statement, he has done something of which he is ashamed; but I am not. I relieve the suffering; so do the clinics of our colleges. Save

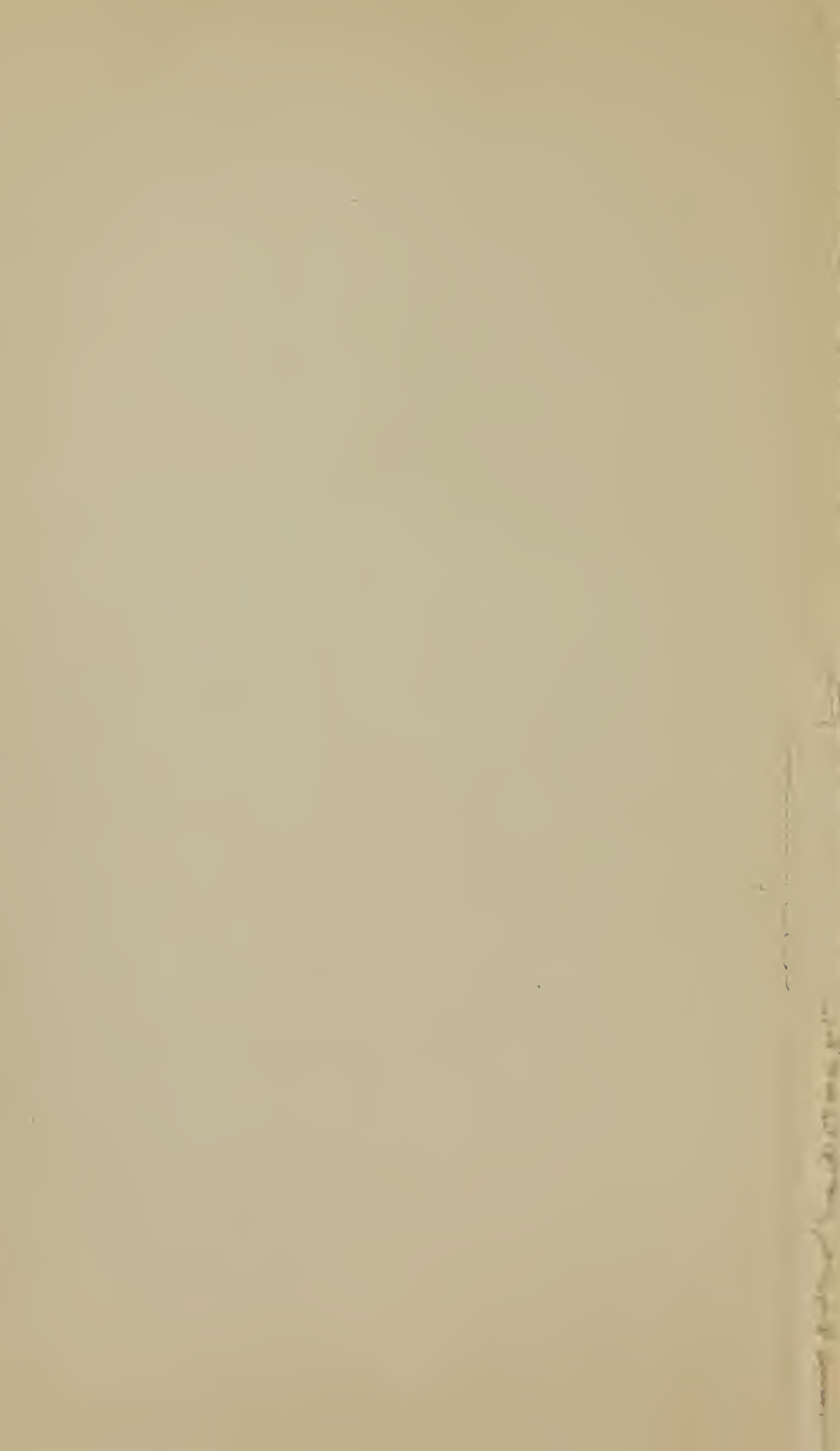
teeth where you can, but relieve the suffering even by extraction : that is the province of the dentist.

So far as the safety of nitrous oxide gas is concerned, we all acknowledge there is danger in taking this gas ; but when you consider the thousands of people who do take it with safety, it is pretty good evidence that the dangers are very slight. As you all know, there are thousands of people who are so nervous that they cannot bear the touching of sensitive dentine, and they can no more bear having a tooth taken out. But by using an anesthetic you eliminate both pain and nervousness so that they can bear the operation as they could not otherwise.

Dr. Conrad. Dr. Thomas spoke the truth ; anyone that has been connected with the dental colleges as a student or as a teacher knows it is true that many teeth are unnecessarily extracted in the colleges. The business end of the college must have money, and they won't allow the clinics to be performed free, as they should be, and they have these teeth extracted by the thousands when they never should be extracted.

Dr. Guilford. I want to say one word in reply to Dr. Conrad. His last argument would be very good but for one fact, and that is that the colleges do not charge for extracting teeth.

Another point, Mr. President. We all know very well how much in advance the West is of the East. And we know, too, that when they come and tell us certain things we can look up to them because we know they tell us the truth ; they simply tell us of things as they exist in their own country. We feel in the East that we have not advanced as fast as they have in the West. But we are coming to it. We think the day is coming in the East, as it has in the West,—particularly St. Louis, where they never extract teeth,—that we will also scorn to do it ; and when that time comes, when we have no longer any use for nitrous oxide gas or the extracting forceps, we will all be happier with the exception of Dr. Thomas, who, instead of coming here with a bouquet in his button-hole, will probably come passing the hat around.



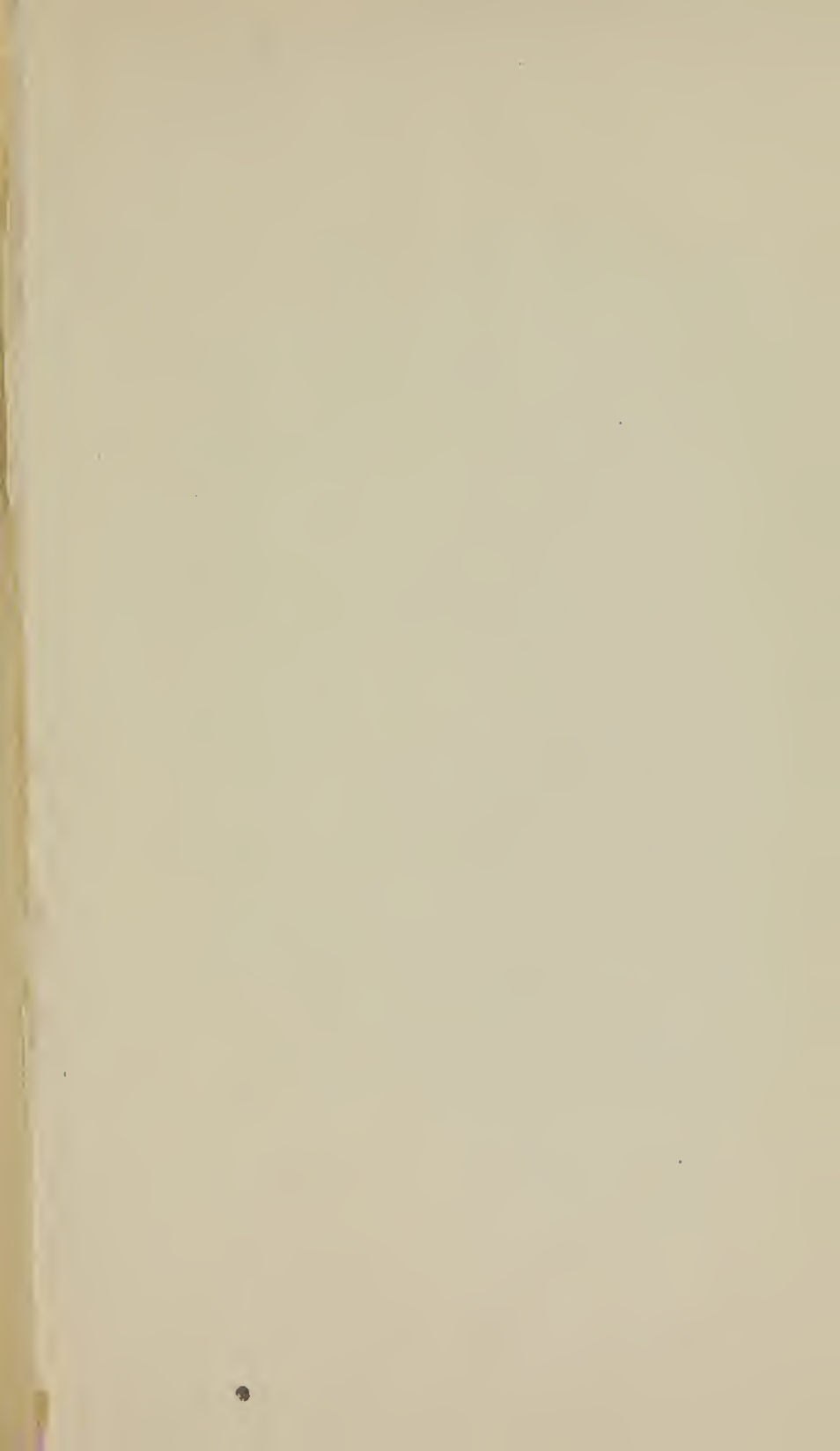
INDEX.

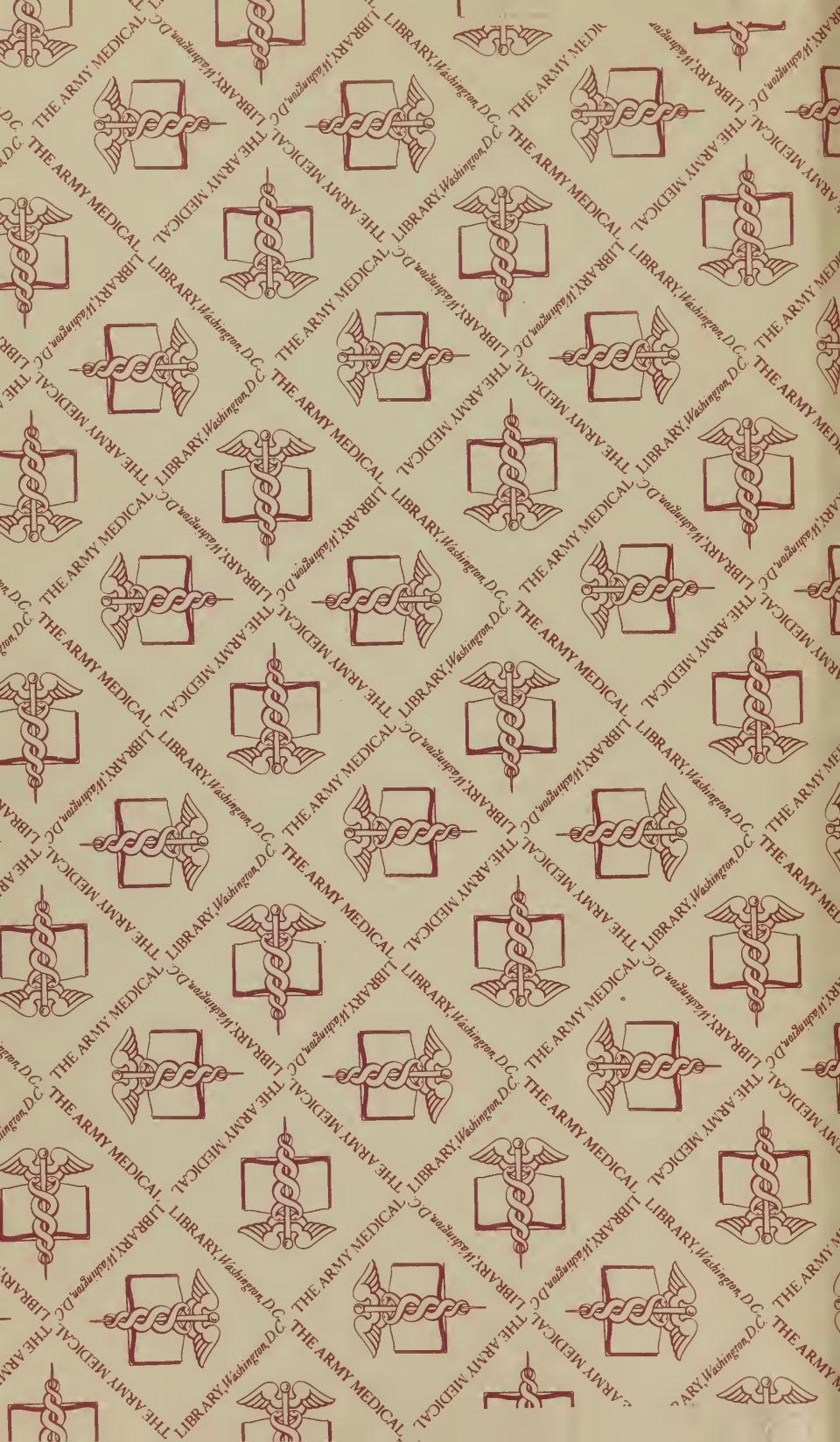
	PAGE
TRANSACTIONS OF THE NEW JERSEY STATE DENTAL SOCIETY.	
Address, "The History and Organization of the New Jersey State Dental Society," J. Hayhurst	22
Atkinson, W. H., action on death of	15
Brown, E. Parmly, name dropped from roll	14
Committee on Accommodations, report of	7
" " Clinical Conference, report of	9
" " Clinics, report of	8
" " Dissemination to the General Public of Dental Literature, report of	9
" " Entertainment, report of	8
" " Essays, " "	10
" " Exhibit, " "	8
" " Legislation, " "	8
" " Membership, " "	16, 17, 20
Committees, appointment of	18
Constitution, amendment to	20
Discussion on World's columbian Dental Meeting	11
Members, election of	17, 21
" list of	6
Officers and committees	5
" nomination and election of	19
Patents on dental operations	10
Pennsylvania State Dental Association, invitation from	16
Response to Dr. Hayhurst's historical paper	29
Treasurer's report	9
White, J. W., action on death of	20

MINUTES OF JOINT SESSIONS.

Address, President L. Ashley Faught	54
" President George Emery Adams	63
Atkinson, W. H., action on death of	51
Clinical Committee, report of	43
Committee on President Adams's address, report of	39
Dental legislation in District of Columbia	42

	PAGE
Discussions, "A Case of Acromegaly"	70
" "Anti-Antiseptics"	92
" "Nitrous Oxide Gas viewed from a Practical Standpoint"	125
" President Faught's annual address	37, 40, 46
" " Adams's annual address	66
" "Pulpicide"	79
" "Some of the Methods and Results of Bacteriological Work"	106
Essay, "A Case of Acromegaly," H. Newton Young	68
" "Anti-Antiseptics," Charles Mayr	89
" "Nitrous Oxide Gas viewed from a Practical Standpoint," John D. Thomas	111
" "Pulpicide, the Best Assurance of Permanent Safety and Usefulness," C. A. Marvin	75
" "Some of the Methods and Results of Bacteriological Work," Henry Leffmann	101
Incidents of Office Practice	72
Members, election of	51
Officers, installation of	52
Prefatory Note	35







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